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# The Auk

## A Quarterly Journal of Ornithology

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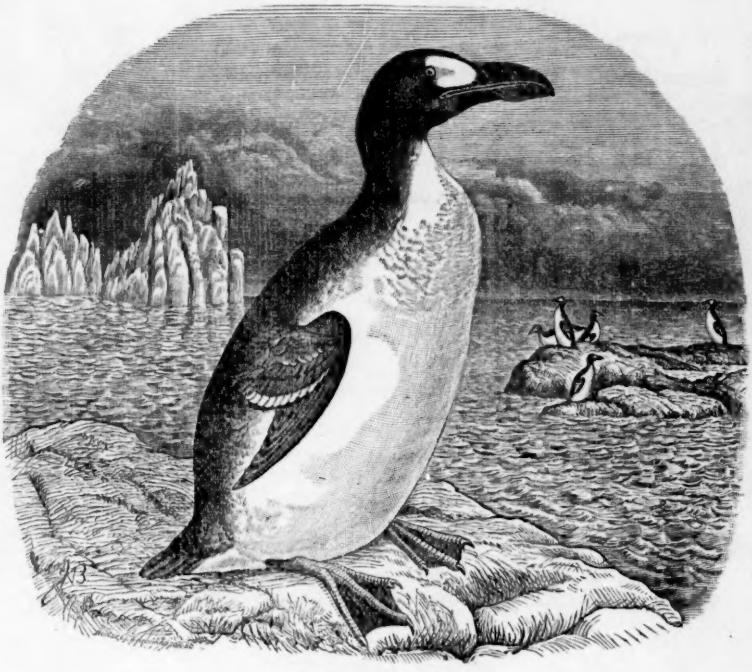

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# CONTENTS OF VOLUME I.

## NUMBER I.

PAGE

DESCRIPTIONS OF SEVERAL NEW BIRDS FROM SANTO DOMINGO. By *Charles B. Cory*. (PLATE I.) . . . . . 1

NOTES ON THE SUMMER BIRDS OF BERKSHIRE COUNTY, MASSACHUSETTS. By *William Brewster* . . . . . 5

DESCRIPTION OF THE FIRST PLUMAGE OF CLARKE'S CROW. By *Charles F. Batchelder* . . . . . 16

NOTES ON THE BREEDING HABITS OF THE AMERICAN EARED GREBES (*Dytes nigricollis californicus*). By *N. S. Goss* . . . . . 18

BIRDS OF THE LOWER URUGUAY. By *Walter B. Barrows* . . 20

BIRD NOTES FROM LONG ISLAND, N. Y. By *William Dutcher* . 31

DENDROCOPOS PURUS, A NEW SPECIES OF WOODPECKER FROM KAMTSCHATKA. By *Leonhard Stejneger* . . . . . 35

THE COUES LEXICON OF NORTH AMERICAN BIRDS. By *Augustus C. Merriam* . . . . . 36

ORNITHOPHILOLOGICALITIES. By *Professor Elliott Coues* . . 49

THIRD ADDENDUM TO THE PRELIMINARY LIST OF THE BIRDS ASCERTAINED TO OCCUR IN THE ADIRONDACK REGION, NORTHEASTERN NEW YORK. By *C. Hart Merriam, M. D.* . . . . . 58

A STUDY OF THE SINGING OF OUR BIRDS. By *Eugene P. Bicknell* . 60

BIRD MIGRATION. By *C. Hart Merriam, M. D.* . . . . . 71

### RECENT LITERATURE.

Nelson's Birds of Bering Sea and the Arctic Ocean, 76; Cory's Beautiful and Curious Birds, 81; Stejneger and Ridgway on Birds of the Commander Islands, 81; Ridgway on New Species of American Birds, 83; Ridgway on the Genus Tantalus, 83; Belding on Birds of Lower California, 83; Ridgway and Nutting on Costa Rican Birds, 84; Brewster on the 'Birds and Fethered Fowles' of Morton's 'New English Canaan,' 84; Gill's Record of Ornithological Progress in 1881, 84; Birds of Western Ontario, 85; Minor Ornithological Publications, 85; Publications Received, 89.

### GENERAL NOTES.

Abnormal Coloration in a Caged Robin, 90; Nest and Eggs of the Ruby-crowned Kinglet (*Regulus calendula*), 90; *Thryothorus ludovicianus* in Massachusetts, 91; Another Example of *Helminthophaga leucobronchialis* from Connecticut, 91; Nest and Eggs of *Myiadestes townsendi*, 91; Prehensile Feet of the Crow (*Corvus frugivorus*), 92; Do Crows carry Objects in their Claws? 92; Nest and Eggs of Couch's Flycatcher (*Tyrannus melancholicus*

*couchi*), 93; Recent Occurrence of the Black-backed Three-toed Woodpecker in Massachusetts, 93; A Woodpecker destroying Cocoons, 93; The Nest of the Saw-whet Owl, 94; Another Gyrfalcon in Rhode Island, 94; Breeding Habits of the Everglade Kite, 95; Nesting of the Broad-winged Hawk (*Buteo pennsylvanicus*), 95; Note on *Zenaidura yucatanensis* Lawr., 96; *Bernicla brenta nigricans* in Massachusetts, 96; Night Herons and Rails in Dakota, 96; Occurrence of the Royal Tern (*Sterna regia* Gamb.) at Tangiers in Morocco, 99; Buffon's Skua in Vermont, 97; A newly-discovered Breeding Place of Leach's Petrel (*Cymochorea leucorrhoa*) in Scotland, 98; Black-throated Auk (*Synthliborhamphus antiquus*) in Wisconsin, 99; Birds new to the Fauna of Kansas, and others Rare in the State, captured at Wallace, Oct. 12 to 16, 1883, 100.

CORRESPONDENCE.

Are Trinomials Necessary? 101.

NOTES AND NEWS.

An Awkward Matter, 105; Ornithological Works in Prospect, 105; Ornithological Societies, 106; Work of the A. O. U. Committees, 107; Personal Notes, 108.

---

## NUMBER II.

PAGE

BIRDS OF THE LOWER URUGUAY. By *Walter B. Barrows* . . 109
ON CHANGES IN ORNITHOLOGICAL NOMENCLATURE—A REPLY TO CRITICS. By *Leonhard Stejneger* . . . . . 114
A SECOND SEASON IN TEXAS. By *Nathan Clifford Brown* . . 120
NOTES ON THE NESTING HABITS OF THE YELLOW-THROATED VIREO (*Lanivireo flavifrons*). By *N. S. Goss* . . . . . 124
A STUDY OF THE SINGING OF OUR BIRDS. By *Eugene P. Bicknell* . 126
ORNITHOPHILOLOGICALITIES. By *Professor Elliott Coues* . . 140
ON THE GENUS *Acanthis*. By *Leonhard Stejneger* . . . . 145
THE WINTER PASSERES AND PICARIÆ OF OTTAWA. By *W. L. Scott* 156
NOTES ON *Ardea wardi* RIDGW. By *Chas. W. Ward* . . . 161
NOTES ON *Phalacrocorax violaceus* AND ON *P. violaceus resplendens*. By *N. S. Goss* . . . . . 163
BRIEF DIAGNOSES OF TWO NEW RACES OF NORTH AMERICAN BIRDS. By *E. W. Nelson* . . . . . 165
ANALECTA ORNITHOLOGICA. By *Leonhard Stejneger* . . . 166
BIRD NOTES FROM LONG ISLAND. By *William Dutcher* . . . 174
CHARACTERS OF A NEW SPECIES OF PIGEON OF THE GENUS *Engyptila*, FROM THE ISLAND OF GRENADA, WEST INDIES. By *George N. Lawrence* . . . . . 180

RECENT LITERATURE.

Stejneger on the American Turdidæ, 181; Coues on the Structure of Birds' Ears, 182; Jeffries on the Epidermal System of Birds, 182; Shufeldt on the Osteology of the Mountain Plover, 183; Townsend on the Birds of Westmoreland County, Penn., 184; Bulletin of the Buffalo Naturalists' Field Club, 184; Minor Ornithological Publications, 185.

## GENERAL NOTES.

A singular specimen of the Black-and-white Creeper, 190; Breeding of the Mockingbird near Boston, Mass., 192; *Dendræca coronata* in Southern New Hampshire, 192; Nest and Habits of the Connecticut Warbler, 192; The Loggerhead Shrike (*Lanius ludovicianus*), 193; Cowbirds in a Black-and-white Creeper's Nest, 193; The Great Horned Owl (*Bubo virginianus*) in Confinement, 194; Ducks transporting Fresh-water Clams, 195; The Lesser Glaucous-winged Gull in New York, 196; The Occipital Style of the Cormorant, 196.

## CORRESPONDENCE.

Trinomials are Necessary, 197; Are Trinomials Necessary? 198; The Ornithological Report in the 'Cruise of the Corwin,' 202; A Plea for the Metric System in Ornithology, 203.

## NOTES AND NEWS.

Obituary—Professor Hermann Schlegel, 205; Annual Meeting of the A. O. U., 206; Ornithological Journals, 206; Work of the A. O. U. Committees, 207; International Ornithological Congress, 208; 'The Auk' Vignette, 208.

---

## NUMBER III.

PAGE

A STUDY OF THE SINGING OF OUR BIRDS. By *Eugene P. Bicknell* 210
THE BREEDING HABITS OF THE PECTORAL SANDPIPER (*Actrodromas maculatus*). By *E. W. Nelson* . . . . . 218
THE MIGRATION OF OUR WINTER BIRDS. By *S. W. Willard* . . 221
DESCRIPTION OF A NEW SONG SPARROW FROM THE SOUTHERN BORDER OF THE UNITED STATES. By *H. W. Henshaw* . . . 223
ANALECTA ORNITHOLOGICA. *Second Series.* By *Leonhard Stejneger* . . . . . 225
NOTES ON CERTAIN LARIDÆ AND PROCELLARIDÆ OF THE NEW ENGLAND COAST. By *Capt. J. W. Collins* . . . . . 236
REMARKS UPON THE CLOSE RELATIONSHIP BETWEEN THE WHITE AND SCARLET IBISES (*Endocimus albus* AND *E. ruber*). By *Robert Ridgway* . . . . . 239
ON THE OCCURRENCE OF THE WHITE-WINGED GULL (*Larus leucopterus* FABER) IN THE STATE OF NEW YORK. By *George N. Lawrence* . . . . . 240
BIRD NOMENCLATURE OF THE CHIPPEWA INDIANS. By *W. W. Cooke* 242
ON A NEW GULL FROM ALASKA. By *H. W. Henshaw* . . . 250
NOTE ON *Astur atricapillus striatulus*. By *Robert Ridgway* . . 252
ON THE POSSIBLE SPECIFIC INDENTITY OF *Buteo cooperi* CASS. WITH *B. harlani* (AUD.). By *Robert Ridgway* . . . . . 253
THE SHORE LARKS OF THE UNITED STATES AND ADJACENT TERRITORY. By *H. W. Henshaw* . . . . . 254
BICKNELL'S THRUSH. By *Rev. J. H. Langille* . . . . . 268
BIRDS OF THE LOWER URUGUAY. By *Walter B. Barrows*. . . 270

## RECENT LITERATURE.

The British Museum Catalogue of Birds. 278; Coues's Key to North American Birds, Second Edition, 282; Stearns's Notes on the Natural History of Labrador, 284; Belding on Birds found at

Guaymas, Sonora, and Lower California, 284; Ridgway on New Birds from California, 284; Cory's Birds of Haiti and San Domingo, 285; Minor Ornithological Publications, 285; Publications Received, 289.

## GENERAL NOTES.

The Generic Name *Ligea*, 290; The Occurrence of the Golden Swamp Warbler (*Protonotaria citrea*) in Rhode Island, 290; Capture of the Summer Redbird on Long Island, 290; *Vireo philadelphicus* in Northern New York, 291; *Vireo philadelphicus* in the Adirondack Region, 291; The Loggerhead Shrike again in Massachusetts, 291; Notes on '*Lanius cristatus*' and '*L. borealis*' of Nelson's 'Birds of Bering Sea and the Arctic Ocean,' 291; Probable Breeding of the Red Crossbill (*Loxia curvirostra americana*) in Central Maryland, 292; The Probable Breeding-place of *Passerculus princeps*, 292; *Calamospiza bicolor* in Southern California, 293; Eggs of the Cowbird in Nest of the Carolina Dove, 293; *Xanthocephalus icterocephalus* in Chester County, S. C., 293; The Turkey Buzzard in Western New York, 293; Occurrence of the Least Tern at San Diego, Cal., 294; Wilson's Petrel in Western New York, 294; New Brunswick Winter Notes, 294; Second Addendum to List of Birds Ascertained to Occur within ten miles from Point De Monts, Province of Quebec, Canada; based chiefly upon the notes of Napoleon A. Comeau, 295.

## CORRESPONDENCE.

An Ornithological Swindler, 295; Can we not have a Simple System of Nomenclature? 297; A Lay View of 'Ornithophilologicalities,' 300.

## NOTES AND NEWS.

Recent and Prospective Ornithological Publications, 304-306; Obituary—Wilson Flagg, Edgar A. Small, Henry G. Vennor, 306; Explorations, 307; Ridgway Ornithological Club, 307; First International Ornithological Congress, 308.

---

## NUMBER IV.

PAGE.

THE CANADA GOOSE (*Bernicla canadensis*). By *James P. Howley* . 309
BIRDS OF THE LOWER URUGUAY. By *W. B. Barrows* . . . 313
ON SOME NEW TERMS RECOMMENDED FOR USE IN ZOÖLOGICAL NOMENCLATURE. By *Professor Coues* . . . . . 320
A STUDY OF THE SINGING OF OUR BIRDS. By *Eugene P. Bicknell* . 322
THE DISTRIBUTION AND MIGRATION OF *Zonotrichia querula*. By *W. W. Cooke* . . . . . 332
ZOÖLOGICAL NOMENCLATURE. By *J. A. Allen* . . . . . 338
COLLECTING IN THE COLORADO DESERT—LECONTE'S THRASHER. By *F. Stephens* . . . . . 353
ANALECTA ORNITHOLOGICA. *Third Series.* By *Leonhard Stejneger* 358
A NOTE ON THE GENUS *Progne*. By *R. Bowdler Sharpe. For. Memb. A. O. U* . . . . . 367
A NEW SUBSPECIES OF WILLOW GROUSE FROM NEWFOUNDLAND. By *Leonhard Stejneger* . . . . . 369
SECOND MEETING OF THE AMERICAN ORNITHOLOGISTS' UNION . . 369

## RECENT LITERATURE.

Brewster on Birds observed in the Gulf of St. Lawrence, 379; Collins's Notes on the Sea Birds of the Fishing Banks, 380; Stejneger on Trinomials in American Ornithology, 381; Baird, Brewer, and Ridgway's Water Birds of North America, 382; Coues and Prentiss's 'Avifauna Columbiana,' 386; Ridgway on Rare Neotropical Birds, 386; Ridgway on the Pied Wagtails of Eastern Asia, 387; Lawrence on New Species of American Birds, 387; Jouy on Birds collected in Japan, 387; Publications Received, 387.

## GENERAL NOTES.

Another Kirtland's Warbler from Michigan, 389; *Geothlypis trichas* wintering in Massachusetts, 389; The Yellow-breasted Chat and Summer Redbird in Canada, 389; Breeding of *Passerculus princeps* on Sable Island, 390; The Cardinal Grosbeak breeding in Brooklyn, N. Y., 390; The Orchard Oriole (*Icterus spurius*) in Western Vermont, 390: The Crow (*Corvus frugivorus*) as a Fisherman, 391; Odd Nesting-site of a Great-crested Flycatcher, 391; Duck Hawks breeding in the Helderberg Mountains, New York, 391; Hybrid between *Pediœcetes phasianellus* and *Cupidonia cupido*, 391; Notes on *Lagopus leucurus*, 392; Eskimo Curlew at San Diego, Cal., 392; Nesting of the Little Black Rail in Connecticut, 392; The Widgeon in Maine in February, 394; Pelicans on the Move, 395; Capture of *Megalestris skua* off the Coast of Cape Cod, Mass., 395; *Brachyrhamphus hypoleucus* off the Coast of Southern California, 396; 'Avifauna Columbiana'—a Protest, 396; Notes on Certain Birds observed on a Voyage from Liverpool to Quebec in September, 1883, 398.

## CORRESPONDENCE.

The Generic Name *Troglodytes*, 400; Strickland as an Advocate of 'Linnæus at '58,' 400; Indian Bird Names, 400; A New Element in Diagnosis, 402.

## NOTES AND NEWS.

National Museum Exhibit of Birds at the New Orleans Exhibition, 403; The Bird Collection of the National Museum, 403; The Ridgway Ornithological Club, 404; 'Texas und seine Ornis,' 404; English Bird Names—Vireo *vs.* Greenlet, and Junco *vs.* Snowbird, 404.

INDEX . . . . . 405

LIGEA PALUSTRIS.

# THE AUK:

## A QUARTERLY JOURNAL OF

## ORNITHOLOGY.

VOL. I. JANUARY, 1884. No. I.


## DESCRIPTIONS OF SEVERAL NEW BIRDS FROM SANTO DOMINGO.

BY CHARLES B. CORY.

Fam. SYLVICOLIDÆ.

Group GEOTHLYPEÆ.

*Synopsis of Genera.*

*a.* Bill slightly depressed and distinctly notched; rictal bristles very short, sometimes wanting; wings short and rounded, about the length of the tail; first primary shorter than fourth; tail long, rounded or graduated; legs short; tarsus as long as the head; belly yellow; legs yellow. *Geothlypis.*

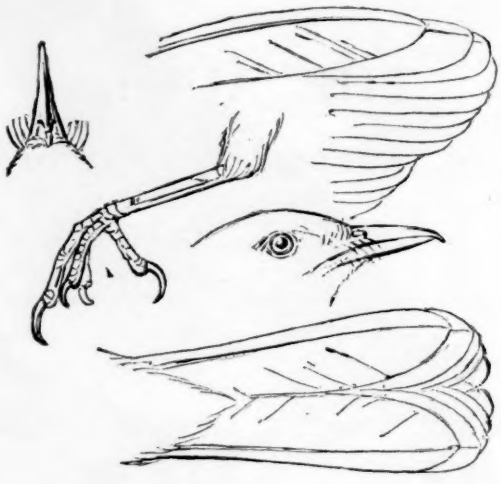
*b.* Bill elongated, somewhat depressed, distinctly notched at tip; rictal bristles short; wings rounded and equal in length to the tail; tail long and rounded; legs and feet stout; tarsus not as long as the head; belly and legs not yellow. *Ligea.*

**Ligea* palustris** gen. et sp. nov. PLATE I.

*Adult male:* Crown, nape, and upper portion of back slaty-plumbeous; rest of back and upper surface of wings and tail yellowish-green; throat, breast, and sides grayish-plumbeous, showing a dull orange tinge on the sides, darkest on the flanks; middle of the throat with a slight grayish tinge, and the middle of the belly distinctly white; outer webs of primaries, and most of the secondaries yellowish-green, giving to the wing a

*Λιγεία.

general greenish appearance; inner webs of primaries dark brown, apparently slate color in some lights; under surface of tail dull green; eyelids white.



Length, 5.50; wing, 2.50; tail, 2.50; tarsus, .75; bill, .50; middle toe, .40.

*Female:* General appearance of the male, but differs from it by underparts being tinged with olive, mixing with the gray, and top of the head green, showing the slate color faintly.

**Hirundo sclateri**, sp. nov.

*Adult male:* Above bright bluish-green, showing a golden color in some lights, becoming decidedly blue on the forehead; upper surface of wings and tail showing a tinge of dull blue, brightest on the tail; underparts pure white; primaries brown; bill and legs very dark brown.

Length, 5.25; wing, 5.75; tail, 2.00.

The present species differs decidedly from *Hirundo euchrysea* from Jamaica, that species having the upper parts bright golden-green, and lacking the blue on the forehead entirely. The Santo Domingo bird is also larger, and the bill is apparently somewhat more slender.

Dr. Bryant mentions the present bird in his list as "*H. euchrysea* (var. *dominicensis?*)," stating that on account of its smaller bill it might be a variety, but he gives no description by which it can be indentified.

I have named this species in compliment to P. L. Sclater, Esq., of London, England.

The following species were described by me some months since, but having lately received other specimens, I redescribe them and add descriptions of the female and young. I have also raised one of them to the rank of a new genus.

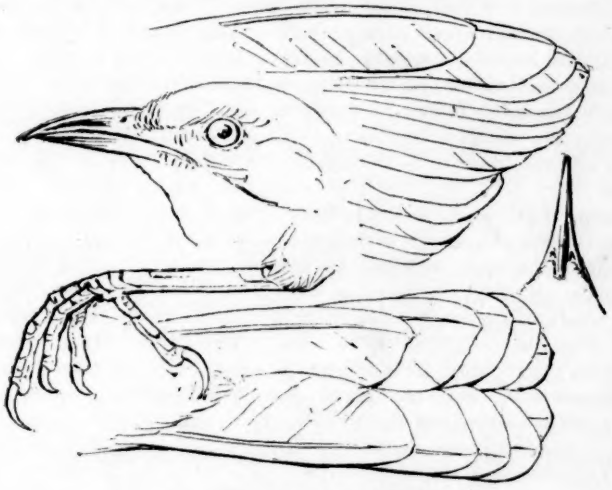
Fam. TANAGRIDÆ.

**Calyptophilus**,* gen. nov.

The present genus has the general appearance, at first glance, of *Phœnicophilus*, but is easily separated from it by the following characters:

*a*. Tail short, about four-fifths as long as the wing; middle toe about two-thirds of tarsus; tail square, slightly emarginate. *Phœnicophilus.*

*b*. Tail long, equal to wing; middle toe about five-sixths of tarsus; tail rounded, and strongly graduated; bill much narrower, and the legs and feet larger than in *Phœnicophilus*. *Calyptophilus.*



**Calyptophilus frugivorus.**

*Phœnicophilus frugivorus* CORY, Journ. Boston Zoöl. Soc., II, No. 4, Oct. 1883, p. 45.

*Male:* Top of the head brown, shading into ashy on the neck, behind the eye; rest of the upper parts, including back and upper surface of wings and tail, brownish-olive; throat white; breast white, becoming ashy upon the sides; flanks brownish-olive, the olive mixing with white upon the crissum; primaries and secondaries olive-brown, the inner webs edged with very pale brown: a patch of bright yellow under the base of the wing,

* Καλυπτος, φιλέω.

extending upon the carpus; eye encircled by a very narrow line of bright yellow, and a spot of yellow in front of the eye at the base of the mandible; upper mandible dark brown; lower mandible yellowish-brown, darkest at the base.

Length, 8.00; wing, 3.50; tail, 3.50; tarsus, 1.00; middle toe, .82; bill, .70.

The female is perhaps somewhat duller, and some specimens appear slightly smaller, but otherwise resembles the male.

### Rupornis ridgwayi.

*Rupornis ridgwayi* CORY, Journ. Boston Zoöl. Soc., II, No. 4, Oct. 1883, p. 46.

*Female:* Top of the head and neck brownish-ash, becoming darker on the back; the feathers of the back and tertiaries edged with rufous; underparts dark rufous, the feathers narrowly banded with white; thighs showing the rufous much brighter, the feathers banded with very fine pale lines; crissum white, with rufous bands near the tips; under part of breast slaty, shading into dull white on the throat; the shafts of the feathers on the throat and breast dark brown, showing in hair-like lines; wings and tail dark brown, imperfectly banded with white, and showing various shadings of dull rufous; all the primares imperfectly banded with white, gradually becoming fainter on the outer webs, until just perceptible on the sixth; the rest of primaries and secondaries with the outer webs dark brown and the inner webs thickly banded with white, showing traces of rufous.

Length, 14.50; wing, 10.00; tail, 6.50; tarsus, 2.75; bill, 1.25.

*Male:* Since the above description was written I have received two males from the same locality. In general plumage they are similar to the female, with the exception that there is much less rufous on the underparts, where this color is replaced by a slaty cast; the thighs have the rufous somewhat brighter, and the bird, as would be expected, is smaller.

Length, 13.75; wing, 9.00; tail, 6.00; tarsus, 2.75; bill, 1.20.

*Immature male:* In general appearance much like *Buteo pennsylvanicus*; underparts dull white, the feathers slightly tinged with rufous, the centre of the surface feathers showing a stripe of brown, giving the body a striped appearance; thighs rufous, but paler than in the adult; above much resembling the adult; the white wing and tail bands replaced by rufous bands on the terminal half of the feathers.

I have named this species in compliment to Robert Ridgway, Esq., of Washington, D. C.

### Œdicnemus dominicensis.

*Œdicnemus dominicensis* CORY, Journ. Zoöl. Soc., II, No. 4, Oct. 1883, p. 46.

*Male:* Top of the head, back, wing-coverts, and tail brown; feathers with very pale edgings, giving a mottled appearance to the back; the tail

feathers showing a band of dull white, succeeded by a broad black tip; breast slaty, becoming dull white on the throat; abdomen white, tinged with very pale rufous; a line of black passing from the top of the eye along the sides of the head to the neck; under surface of wings white, becoming dark brown at the tips; the shafts of the feathers on the breast and throat dark brown, forming numerous hair-like lines on the surface of the plumage; legs and feet greenish-yellow; upper mandible black; under mandible green at the base, shading into black at the tip; iris yellow.

Length, 14.50; wing, 8.50; tail, 3.75; tarsus, 3.75; bill, 1.50.

The sexes appear to be similar.

## NOTES ON THE SUMMER BIRDS OF BERKSHIRE COUNTY, MASSACHUSETTS.

BY WILLIAM BREWSTER.

PROBABLY no other area of similar extent in Massachusetts has held out as inviting a field to the ornithologist as Berkshire County. Owing to its elevated, mountainous character it has been long suspected to harbor certain northern birds not known to summer elsewhere, at least regularly, within our limits, and speculations have been more or less freely indulged in by writers as to the species that breed there. But rather curiously no one — or at least no competent observer — seems to have cut the Gordian knot byinvestigating the region at the proper season, so that at this late date we actually have no definite information regarding it. With the hope of doing something towards filling this blank I visited the county last summer (1883) and explored the northern portion of it, — rather hurriedly it must be confessed, but still with sufficient thoroughness to acquire very much more than a superficial knowledge of its summer birds. My stay extended from June 21 to June 29, thus embracing a fair share of that brief period when the waves of migration are at rest, and birds of nearly every kind engaged in reproduction. Hence it is reasonable to assume that all the species found in numbers were established for the summer and breeding. This consideration is important inasmuch as I found but few nests.

*Williamstown.* The first three days were spent at Williamstown whence excursions were made for several miles in every direction. The surrounding country is hilly and well watered, but sparsely timbered, most of the land being under cultivation. In its general features it resembles portions of Worcester County, but the neighboring mountains are of course very much higher than any in Eastern Massachusetts; indeed, Mt. Graylock, which lies only four miles to the eastward of the town, is the highest point in the State, having an elevation of 3500 feet.

The woods are composed chiefly of beeches, rock maples, chestnuts, paper and yellow birches, white pines and hemlocks; with sycamores, Balm-of-Gilead poplars, red maples, elms, and hornbeams (*Carpinus americana*) along the streams. There are no firs and few spruces except on the mountains.

The bird fauna, to my surprise, proved to be not only strictly Alleghanian, but actually identical, save in the apparent absence of two or three species, with that of many parts of Middlesex County, in Eastern Massachusetts. Thus there were Bluebirds, House Wrens, Yellow Warblers, Warbling and Yellow-throated Vireos, Cedar Birds, Purple Martins, Cliff, Barn, and White-bellied Swallows, Purple Finches, Goldfinches, Song Sparrows, Baltimore Orioles, Crow Blackbirds, Kingbirds, Wood Pewees, Least Flycatchers, and Golden-winged Woodpeckers about the cultivated grounds and orchards; Chickadees, Black-and-White Creepers, Ovenbirds, Redstarts, Wood Pewees, and Red-eyed Vireos in the woodlands; Savanna Sparrows, Bobolinks, Meadow Larks (not common), and Red-winged Blackbirds on the meadows and broad, grassy intervale farms; Wilson's Thrushes, Catbirds, Maryland Yellow-throats, and Chestnut-sided Warblers in the thickets along water courses; Grass Finches, Field Sparrows, and Indigo Birds on the rocky hillside pastures; and Robins, Crows, and Bridge Pewees nearly everywhere. Among the species apparently absent but to be expected * in such company, may be mentioned the Wood Thrush, Brown Thrasher, Nashville Warbler, White-eyed Vireo, and Swamp Sparrow. Several of these, as well as others which might be included in the same category, were observed only a few miles distant, but in lo-

* Several farmers told me that the Quail (*Ortyx virginiana*) formerly occurred in small numbers, but I obtained no positive proof of this.

calities of more or less different character from those above indicated.

*Pownal, Vermont.* The following notes were made June 23, during a drive to Pownal Pond, a small sheet of water about twelve miles to the northward of Williamstown in Pownal, the border township of Vermont. Although the locality does not come strictly within the scope of the present paper, it seems to me worth brief mention in this connection.

After passing the State line a marked change was apparent in the topography of the country. The surface became more broken and the hills higher, many of them in fact being low mountains. They were mostly cleared and cultivated, or in pasturage, nearly to their summits, which were usually tufted with woods. Altogether, the land had a more fertile aspect, especially on the mountain sides.

The bird fauna did not differ strikingly from that of Williamstown, and showed no traces of any decided Canadian infusion. The species observed which had not been previously noted at Williamstown were the Hermit Thrush, abundant and in full song in an extensive larch swamp; the Nashville Warbler, one specimen; the Swamp Sparrow, one; Henslow's Sparrow, a pair feeding young in a meadow bordering a brook; the Yellow-winged Sparrow, a single male, singing on a fence stake by the roadside; the Olive-sided Flycatcher, a pair at work on a nearly finished nest built close to the stem of a young larch in the swamp just mentioned; and the Great-crested Flycatcher, of which at least half-a-dozen were seen and heard. The Nashville Warbler and the Yellow-winged Sparrow were not met with at all in Berkshire County, but the Swamp Sparrow was afterwards found sparingly along the course of a brook near the base of Mt. Graylock, the Hermit Thrush and Olive-sided Flycatcher proved to be abundant on the sides of that mountain, and several Henslow's Sparrows were observed in a meadow near the town of Adams.

*The Hopper.* On the afternoon of June 24, I left Williamstown and took up my quarters at a farm house at the head of a picturesque valley locally known, from its peculiar shape, as the "Hopper." This valley is a *cul de sac*, opening to the westward and walled in on the other three sides by Mt. Graylock and its neighboring summits, Prospect and Bald Mountains. Although lying at a considerable elevation above Williamstown, and shut

in by towering mountains, the main valley differed little in general appearance from the low country to the westward. Its fertile acres were similarly devoted to corn fields, mowing lands, orchards, and pastures, which offered nothing more interesting than Robins, Yellow Warblers, Field Sparrows, Grass Finches, Song Sparrows, Bobolinks, Orioles, Kingbirds, etc. Even the mountain sides, as far up as I explored them (to an elevation of about two or three hundred feet above the valley), seemed to harbor in their hard-wood forests, only such familiar woodland birds as the Ovenbird, Red-eyed Vireo, Scarlet Tanager, Rose-breasted Grosbeak, and Wood Pewee. This was disappointing, and I began to fear that I should find nothing of importance short of the summits of the mountains, when by chance I wandered into a ravine that extended back for a mile or more between two outlying spurs of Graylock.

Like most mountain glens this had a sparkling brook that brawled noisily over pebbly shallows, plunged impetuously down ragged ledges, swept silently between vertical rocky walls fringed with drooping ferns, and anon settled for a brief rest in pools where trout lurked in the shadows and water spiders dimpled the otherwise unruffled surface. The mountain sides rose steeply on either hand, in places narrowing the bed of the ravine to a width of only a few rods, in others retreating far enough to leave level stretches several hundred yards in extent. The ground everywhere was densely, often heavily, timbered with beeches, red and rock maples, paper and yellow birches, basswoods, etc., with a sprinkling of black spruces and an undergrowth, especially about the openings, of mountain maple (*Acer spicatum*), striped maples (*A. pennsylvanicum*), and hobble-bushes (*Viburnum lantanoides*); while a few scant beds of ground hemlock (*Taxus baccata canadensis*) clung to the steeper slopes. Long after the morning sun had flooded the valley outside, this solitary glen lay in chill shadow, and even at noontide it was invariably damp and cool, especially under the trees. These conditions, aside from those of elevation, flora, etc., doubtless attracted certain birds and repelled others; at all events the place held a rather curious mixture of bird-life.

The number of species was apparently small, for in the course of four visits I detected only eighteen; viz., the Robin, Wood Thrush, Wilson's Thrush, Black-capped Chickadee, Chest-

nut-sided Warbler, Black-throated Green Warbler, Mourning Warbler, Canada Flycatcher, Ovenbird, Redstart, Red-eyed Vireo, Scarlet Tanager, Black Snowbird, Rose-breasted Grosbeak, Pileated, Hairy, and Downy Woodpeckers, and the Ruffed Grouse. Of these the Wood Thrush, Wilson's Thrush, Ovenbird, and Red-eyed Vireo were abundant; the Robin, Chickadee, Black-throated Green Warbler, Canada Flycatcher, Scarlet Tanager, Grosbeak, and Grouse, common; the remainder more or less rare.

I saw only one specimen each of the Mourning Warbler and Snowbird. The former, a beautiful male, was shot near the brook about a quarter of a mile above the entrance to the ravine. It was singing among some bushes on the edge of an opening grown up to wild raspberry vines—just such a place in fact as the bird commonly chooses for a breeding ground in Northern New England, and I have little doubt that its mate was sitting on her eggs somewhere near, although I tramped the brush through and through without flushing her.

The Snowbird was also in this opening. Unlike the Warbler, he was silent and apparently ill at ease. Probably he had wandered down from the heights above for a brief visit only, perhaps to hear the Wood Thrush sing, more likely for a bath in the brook; at all events, he was gone when I returned an hour later.

Pileated Woodpeckers were seen and heard at various places in the ravine, but they are such rovers, and withal so noisy and conspicuous, that I may have met the same birds several times. On one occasion, while watching a Canada porcupine basking in the sun on the branch of a mountain maple, every now and then nibbling at its tender shoots in the leisurely way peculiar to his phlegmatic race, I heard the Flicker-like call of one of these Woodpeckers on the mountain-side above. Hastily concealing myself I imitated his tapping by striking the palms of my hollowed hands together, and almost immediately two of the superb birds appeared and alighted against the trunk of a beech directly overhead. As they chased one another upwards their scarlet crests flashed like fire among the leaves. Reaching a decayed branch they attacked it from opposite sides fairly bombarding me with pieces of bark and chunks of rotten wood. When at length they discovered me, they were off in an instant, each swinging down in a long graceful curve as he disappeared among the trees.

What with porcupines, Logcocks, Mourning Warblers, moosewood (*Viburnum lantanoides*), and every now and then a mountain butterfly alighting for a moment in the path before me and slowly opening and closing its velvety wings, I found it difficult to believe that I was really in my native State, and not in some retired forest of northern Maine or New Hampshire.

The Hermit Thrush might perhaps be mentioned in this connection, for I occasionally caught the tones of his bell-like voice stealing down from some elevated point on the mountain side. But he did not properly belong among the dwellers of the glen, any more than did a Golden Eagle, which I saw one day circling high above it. These Eagles, by the way, are apparently far from rare here, for the museum at William's College* contains no less than four specimens which have been taken near Williamstown, and the farmers in the "Hopper" assured me that the bird breeds every season on Graylock.

*Mt. Graylock.* While in the "Hopper" I often looked longingly up at the dark spruce forest on the brow of Graylock, feeling sure that it must shelter many of the birds of which I was in search; but the western approaches to the summit of that mountain are so steep and difficult that I decided to finish the low country first and make the ascent from Adams, on the eastern side. The day chosen for this undertaking (June 28) proved exceptionally favorable; there had been rain over night, and through the forenoon great ragged clouds—the afterbirth of the storm—trailed their cooling shadows across the landscape, while occasional showers, followed by intervals of sunshine, completed the conditions for one of those rare days when birds sing almost uninterruptedly from daylight until dark. It was so still, too, that their songs could be heard at unusual distances.

I started early, on horseback, taking an assistant to look after the animals, as well as to assist at removing obstructions in the old and now nearly obliterated bridle path. For the first mile or two the way led through a succession of steep pastures more or less grown up to shrubby spruces, with occasional thickets of young beeches and, along the streams, some larger beeches, sugar maples, and birches (*Betula lutea* et *papyracea*). The charac-

* There are also two Williamstown Ravens in this collection, one taken in 1877, the other without a date; and a Bohemian Waxwing marked simply "Male, Williamstown, Mass."

teristic birds in this lower zone or belt were Robins, Hermit Thrushes, Black-and-Yellow Warblers, and Blue Jays, among the spruces; Wood Thrushes (not observed beyond the end of the first mile from the base), Wilson's Thrushes, Red-eyed Vireos, and Maryland Yellow-throats, with an occasional Redstart and Canada Flycatcher, along the streams; and Grass Finches and Snowbirds over the more open ground. In one place near the edge of a field of oats, I also found a single pair of Savanna Sparrows.

A little more than half-way up, these pastures ended and the path, after winding through a belt of heavy timber, tenanted only by Red-eyed Vireos and Black-throated Green Warblers, ascended a steep ridge and entered a level stretch sparsely covered with old, moss-grown birches. Here we found a few Snowbirds and a White-throated Sparrow, which proved to be the lower outpost, as it were, of the Canadian region which I was seeking.

Climbing another ridge that for the last mile or two had shut out all view of the summit, we paused on the threshold of a tract differing widely in character from anything that we had hitherto passed. It was a narrow plateau, extending in a semicircle around the eastern side of the mountain, between the ridge just mentioned and the final peak or summit, and for the most part comparatively level, although more or less broken by knolls and shallow ravines. This area, as well as the sides of the peak itself for some distance above the base, had been cleared of the original timber, but the ground was fast becoming covered with a vigorous second growth of maples (*Acer spicatum*) and birches (*Betula lutea* et *papyracea*), which in places had attained an average height of at least fifteen feet, while in others they failed to conceal the unsightly piles of cord-wood that marked the scene of the wood-choppers' labors during the preceding winter. At intervals a few scattered spruces of fair size and many tottering birch stubs had been left standing, and the thickets were cumbered with decaying logs and heaps of severed tree tops.

Before we had time to note these details, in fact at the very moment of drawing rein on the outskirts of this tract, I became aware that the goal of my hopes was reached. A shower had just passed and for a brief space, as the sun, peeping through a rent in the clouds, threw an intense light on the sea of wet,

glistening foliage, the air fairly rang with bird music. Sitting motionless in the saddle, straining my ears to catch the more distant sounds, as well as to disentangle the nearer ones, I quickly identified the measured chant of the Olive-backed Thrush, the liquid tinkling melody of the Winter Wren, the sweet, gushing trill of the Mourning Warbler, the wheezy song of the Black-throated Blue Warbler, the ringing whistle of the White-throated Sparrow, the low plaintive note of the Yellow-bellied Flycatcher, and the penetrating call of the Olive-sided Flycatcher, —at least three additions to the summer fauna of Massachusetts within less than as many minutes!

After the volume of sound had ebbed to its normal level we pursued our way, pausing often to listen, or dismounting to look for nests, or follow up some shy bird. The latter exertion, however, was scarcely needed, for most of the rarer species were present in such numbers that they were continually in sight or hearing. The Mourning Warblers and Winter Wrens were especially abundant, more so in fact than I have ever seen them elsewhere, and dozens of specimens might have been procured without leaving the path. The Olive-backed Thrushes, Black-throated Blue Warblers; and White-throated Sparrows were also common, but I found, or at least positively identified, only one pair of Yellow-bellied Flycatchers. To this list I shortly added the Yellow-bellied Woodpecker, several pairs of which were seen, one feeding young in a nest in one of the larger birch stubs; the Hairy Woodpecker, which proved to be rather common; and the Pileated Woodpecker, whose presence was attested by its unmistakable "peck-holes," although none of the birds were actually observed.*

The species just mentioned were of course not the only ones found here, although many of them were among the most abundant

* I also find the Black-backed Three-toed Woodpecker included in my notes on the following evidence, which, while certainly not strong enough to warrant a positive record, is worth mentioning: We were skirting a swampy tract of spruces spared, for some unaccountable reason, by the lumbermen, when I heard a Woodpecker "drumming" on a resonant limb. The next moment it called once or twice, but I could not get a sight at it, although I dismounted and searched the swamp in every direction. That it was a *Picoides* I have not the slightest doubt, but I am by no means certain as to whether it was *arcticus* or *americanus*, the notes of the two species being very similar. The chances of course favor the larger and commoner (as well as perhaps more southern) species, to which, indeed, I referred it without much hesitation at the time.

and conspicuous. But there was in addition a sprinkling of such ubiquitous birds as the Robin, Bluebird, Maryland Yellow-throat, Scarlet Tanager, and Catbird. I also came upon a pair of Towhee Buntings which, rather curiously, were the only individuals met with in Berkshire County. They were feeding young already on wing in a thicket where their nearest neighbors were Winter Wrens and Mourning Warblers.

At the point where the bridle path left this opening it plunged directly into a forest made up of spruces (*Abies nigra*) and balsams (*A. balsamifera*), with a mixture of yellow birches and a scant undergrowth of mountain ash, mountain maple, and hobble-bush. These woods continued without a break to the summit, a distance of nearly a mile as the path ran. They were very beautiful—the trees of fairly large size and evident antiquity, although more or less dwarfed and spreading. The ground beneath was firm, moderately open, and so free from rocks or holes that we often left the trail and rode at will between the trees. I had expected to find many birds here, but they proved far from numerous. I detected only two species not seen elsewhere, viz., the Red-bellied Nuthatch and Blackburnian Warbler. The former was not uncommon, but I saw only one Blackburnian—a beautiful male in full song among the branches of a spruce which overhung the path. I also discovered a neatly finished but empty nest of the Olive-backed Thrush. It was built in the top of a fallen fir, and so nicely concealed that I should have passed without noticing it had not the bird fluttered off, as I brushed the end of the branches. These Thrushes were more numerous here than in the opening below, and their music was often the only sound that broke the silence. I scrutinized them closely, hoping to find a stray *bicknelli* among them, but all that I saw or heard were unmistakably common Olive-backs.

The summit of Graylock was cleared years ago to afford a better view, but the surrounding woods have thrown out an advance guard of saplings which are fast recovering the lost ground. There is still a small open space, however, covered with wild grasses, among which I noticed buttercups but no sub-Alpine flowers. About this opening I found—in addition to the generally-distributed Olive-backs, Canada Flycatchers, and Snowbirds—a few Black-throated Green Warblers, a single Ovenbird (*Siurus auricapillus*), a Purple Finch, and a little party of Chimney

Swifts, which were careering about close over the bushes and turf, evidently reaping a rich harvest of insects. The most abundant species was the Snowbird, more numerous here than elsewhere on Graylock. This bird seems to have a particular fondness for bare mountain tops of whatever altitude.

We left the summit at about two o'clock and spent a long afternoon in the descent, repeating many of the episodes of the morning, finding nothing not already mentioned, and reaching the base barely in time to hear the Bobolinks bid good night to the sun. Looking back at the rosy haze fast deepening into purple shadows under the brow of the mountain, it was hard to realize that the day's experience had not been a delightful dream.

*Recapitulation.* Judging from what I saw of it, the low country (i.e., the valleys along the streams and the hills of moderate elevation) of northern Berkshire County has a nearly pure Alleghanian Fauna. Indeed I failed to find there a single bird which does not breed regularly within ten miles of Cambridge, although a few species common and universally distributed in the eastern portion of the State were apparently absent. Conspicuous among these were *Harporhynchus rufus*, *Dendræca pinus*, and *Pipilo erythrophthalmus*. Minor differences, due possibly to local causes, were the scarcity of *Helminthophila ruficapilla*, *Geothlypis trichas*, and *Melospiza palustris*, and the restriction of *Turdus mustelinus*, *Pyranga rubra*, and *Goniaphea ludoviciana* to the mountain sides or their intersecting water courses. But except for these slight differences the birds met with during a morning walk along the roads and through the woods and meadows about Williamstown or Adams* were identical with those which occur almost everywhere in Middlesex County.

At the base of the mountains or rather a little way up on their sides, and in such elevated glens as that at the head of the "Hopper," one would indeed find a few Canadian forms, such as *Dendræca maculosa*, *Geothlypis philadelphia*, and *Junco hiemalis;* but it was only a sprinkling, for the border line, at

* Mr. Allen tells me that he has seen Snowbirds in July on the outskirts of North Adams, but it must be remembered that they can descend from the neighboring mountains in a few minutes and doubtless they, with most of the other mountain birds, do actually visit the low country as soon as their young are able to fly, and long before the arrival of the northern migrants.

least on Graylock, was drawn sharply at an elevation of probably not less than 2500 feet. The only true Canadian birds which I found in any numbers below this line were *Dendræca maculosa*, *Geothlypis phildelaphia*, and *Junco hiemalis*. Above it *Turdus swainsoni*, *Anorthura hiemalis*, *Dendræca cærulescens*, *Geothlypis philadelphia*, and *Zonotrichia albicollis* were abundant and unmistakably breeding, while *Sitta canadensis* and *Sphyrapicus varius* were moderately common, and *Dendræca blackburnæ* and *Empidonax flaviventris* at least sparingly represented.

In addition to these there were also the northern but not strictly Canadian forms *Myiodioctes canadensis* and *Contopus borealis*; the former ranging from the base to the summit, the latter confined to the area above the line just indicated. Rather curiously, *Turdus pallasi* and *Dendræca maculosa* were not found above this line although both extended well up to it.

Among the species just mentioned four, viz., *Turdus swainsoni*, *Dendræca maculosa*, *Geothlypis philadelphia*, and *Empidonax flaviventris*, have not, to my knowledge, been previously found summering in Massachusetts, and *Anorthura hiemalis* has been detected only once (Lynn; see Bull. N. O. C., Vol. VIII, pp. 119, 120). Of the others, *Turdus pallasi*, *Myiodioctes canadensis*, *Junco hiemalis*, and *Contopus borealis* have been long known to breed sparingly or locally; *Dendræca cærulescens* has been found nesting in Connecticut (Ibid., Vol. I, pp. 11-13), as well as occasionally observed during summer in the western part of Massachusetts; *Zonotrichia albicollis* has been found breeding (a single instance) at Framingham (Ibid., Vol. V, p. 52), and *Sitta canadensis*, *Dendræca blackburnæ*, and *Sphyrapicus varius* have been recorded on more or less good authority as occurring in summer in various parts of the State.

To return to the general subject. The nearly unmixed Alleghanian character of the region at large is so strongly marked that Graylock may be fitly characterized, in faunal language, as a Canadian island rising from an Alleghanian sea. Like the Catskills and some other outlying districts of the Canadian system, it is probably cut off from the mainland of such non-migratory Canadian forms as *Parus hudsonius*, *Perisoreus canadensis*, and *Canace canadensis*, but, on the other hand, it seems to

attract a large proportion of the migratory Canadian species. Some of the neighboring mountains, to continue the simile, doubtless also form Canadian islands, and there are probably many reefs—mountains of low elevation—where the area above high-water mark is sufficient to support only a few northern forms. It may be fairly questioned, however, if elevation here, as well as in other mountainous regions, is the sole factor governing the distribution of birds. That it is the chief one cannot be disputed, but certain birds are apparently influenced very strongly in their choice of breeding grounds by the presence or absence of certain trees or shrubs in which they are accustomed to build their nests. The flora of any given area is of course largely determined by altitude, but it may be materially affected, and even radically changed, by man's interference. For instance, in the region under discussion, spruces and firs are said never to reappear after the first cutting, the second-growth being invariably of hard woods; and, if tradition can be believed, several of the mountains near Graylock, which are now covered with beech, maple, birch, etc., originally had extensive tracts of "black growth," i.e., spruce and fir. Surely such changes must materially affect bird-life.

Graylock is in a state of transition. It still has large areas of spruces, but they are rapidly disappearing, and the character of the mountain is likely to undergo a great change within the next twenty-five years. It will be interesting to watch if the birds change also.

Of the fauna of the neighboring mountains I cannot speak positively, not having explored them to their summits; but I shall be surprised if they prove to harbor anything like the number of northern species which occur on Graylock.

## DESCRIPTION OF THE FIRST PLUMAGE OF CLARKE'S CROW.

BY CHARLES F. BATCHELDER.

In Colorado last spring, at a station known as McGee's, on the Denver and South Park R.R., in Chaffee County, I had the good

fortune to obtain a specimen of Clarke's Crow in first plumage. As no account of the bird in this early stage has, I believe, ever appeared, the following description may be of interest.

**Picicorvus columbianus,** *juv., first plumage* (♀, No. 1340, Coll. C. F. B., McGee's, Chaffee Co., Colorado, May 11, 1883). Above dull brownish gray, much darker than in the adult, darkest on rump and scapulars; upper tail coverts nearly black, but with a brownish tinge instead of the metallic blue-black of the adult.

Forehead and sides of head brownish ash, lighter than back, but the pearly tint of the adult is everywhere replaced by brownish. Nasal feathers dark brown. A dusky loral spot. The white supercilliary stripe and eye-ring, and other white about the face present in the adult, are wanting. The chin, however, is ashy white, with a few darker feathers scattered through it.

Beneath the general coloring is brownish ash, darkest on the breast. Most of the feathers of the throat, breast, and belly are tipped with ashy white, which gives an indistinctly barred effect to the plumage. Some of the feathers of the sides and rump are also tipped with white.

Wing similar to the adult. The white of the secondaries, however, extends along the margin of the outer web farther toward the base. There is also a small ashy spot at the apex of the seventh primary, and traces of the same on the eighth, ninth, and tenth primaries. The secondary coverts are obscurely tipped with white; and the under wing-coverts have conspicuous white tips. Tail similar to that of the adult; but the black lines on the shafts of the rectrices extend nearer to the tip (three-fifths of its length in the fourth rectrix); the black on the inner webs of the outer four rectrices * extends along the shaft farther from the base; and on the fifth the white covers the end of the inner web for a fifth of the way to the base, runs up the middle of the web at least as much more, and extends along the edge of the web two-thirds of the way to the base. Under tail-coverts white, as in the adult.

The bill was dark gray; and the feet were gray.

I give the following measurements (in centimetres), and add for comparison the average of those of six adults. All the measurements are from dried skins.

♀, juv., No. 1340 (first plumage): Wing, 17.80; tail, 10.40; culmen, 2.95; commissure, 3.40; depth at nostrils, 1.00; width at nostrils, 1.05; tarsus, 3.30; middle toe, 2.40; middle claw, 1.10.

Average of six adults: Wing, 19.28; tail, 11.73; culmen, 4.11; commissure, 4.53; depth at nostrils, 1.25; width at nostril, 1.16; tarsus, 3.54; middle toe, 2.63; middle claw, 1.28.

* In the published descriptions of this species I can find no reference to this black marking, which seems to have been overlooked, authors stating that the outer four pairs of rectrices are "white."

## NOTES ON THE BREEDING HABITS OF THE AMERICAN EARED GREBE (*DYTES NIGRICOLLIS CALIFORNICUS*).

BY N. S. GOSS.

JUNE 4, 1877, I had the pleasure of finding about one hundred pairs of these birds nesting in a little cove of Como Lake — a small alkali lake without outlet, in the Territory of Wyoming, on the line of the Union Pacific Railway; altitude 6680 feet. The nests were in a narrow strip of rushes, growing in water eighteen inches deep, and about one hundred and thirty feet from the shore; between the rushes and the shore was a heavy growth of coarse, marsh grass, the whole covering not over from one to one and one-half acres in area. The bank being a little higher than the ground back of it, the approach could be made unobserved, and my appearance, so unexpected and near, gave the birds no time to cover their eggs, as is their wont, giving me a fine opportunity, on wading out, to see the eggs in their nests. I collected the eggs from two nests, five in each; and counted from where I stood over twenty nests, with from one to five eggs each. Quite a number of others were completed, but without eggs, and still others were building. The floating nests were made of old broken rushes, weeds, and debris from the bottom, and were partially filled in and around the standing, growing rushes. There were no feathers or other kind of lining. They were from five to ten inches in diameter; the outer edge or rim was from two to three inches above the water. The eggs in several touched the water, and were more or less stained in their wet beds. The color of the eggs when fresh was white, with a slight bluish shade. The average measurements of the ten eggs was 1.81 by 1.20 inches. I watched the birds closely during the three days I remained there. Those out upon the lake were noisy and active, keeping near the centre and closely together. It was their courtship and mating ground, but the birds in going to and from their nesting places were silent and watchful. In leaving their nests they would dive and come up quite a distance away and swim rapidly for the flock in the lake. I noticed at all times, not far from the breeding

grounds, from five to eight birds, evidently sentinels, sitting upon the water with their heads high, ever upon the lookout and ready to give the alarm, but slow to leave their station,—in fact never leaving the little bay, but taking good care to keep out of reach. As soon as I passed by, the birds, frightened from their nests, would cautiously but quickly return and join the sentinels, from which point they would dive and come up within the rushes. In no instance did I see them swim to or from their nests; they may, however, do so when not disturbed.

As papers of this character are written solely to present the observations and views of different writers in order that in the end the history of the subject may be known and correctly given, I will say that Mr. H. W. Henshaw, in a paper of like character (Am. Nat., V, 1874, p. 243), states that he found the birds nesting in similar lakes in Southern Colorado, but I think he is somewhat in error in the conclusions reached, as given in the following statement: "The eggs were wholly concealed from view by a pile of weeds and other vegetable material laid across. That they were thus carefully covered merely for concealment I cannot think, since in the isolated position in which these nests are usually found, the bird has no enemy against which such precautions would avail. On first approaching the locality the Grebes were all congregated at the further end of the pond, and shortly betook themselves through an opening to the neighboring slough; nor, so far as I could ascertain, did they again approach the nests during my stay of three days. Is it not then possible that they are more or less dependent for the hatching of their eggs upon the artificial heat induced by the decaying vegetable substances of which the nests are wholly composed?"

Surely the birds *have* enemies in the vicinity, especially in the Hawks and Gulls that would quickly notice the eggs if uncovered. In the grass, not fifty feet from the nests I have described, a Marsh Hawk (*Circus hudsonius*) was found sitting upon five eggs. I also noticed several Hawks in the vicinity, and several Ring-billed Gulls (*Larus delawarensis*) were skimming over and about the lake. Further, I do not think it "possible" to create artificial heat from the slow decay of the vegetable matter composing the nests, resting as they do in and upon the ice-cold water, the eggs often touching the same. Before wading out to the nests I removed my boots and socks, and during the short time I was

in the water my feet and limbs were painfully cold. Colorado lies farther south, and the elevation is not so great, but the waters are made largely from the melting snows, and must be cold so early in the season. I am inclined to think rather that at the time the birds were first discovered the males, and hen birds not mated or laying, were near their nesting grounds, and that those on their nests, after covering their eggs, dove off, came up in the flock and swam away with it, returning one by one when the cause for alarm was removed. By swimming under water, with only the bill out at times to breathe (a well known habit of the birds), they could easily reach their nests unnoticed. Or it may be, as Mr. Henshaw only found three eggs in a nest — four to five being a full set — that none of the birds were sitting. In this case there would be no necessity for a hurried return, as absence during the day would do no harm.

## BIRDS OF THE LOWER URUGUAY.

BY WALTER B. BARROWS.

(*Continued from Bull. Nutt. Orn. Club, Vol. VIII, p. 212.*)

94. **Drymornis bridgesi** *Eyton.* CARPINTERO (CARPENTER, WOODPECKER,— from its similarity in some respects to these birds).— Resident and abundant at Concepcion, where it undoubtedly breeds, though I was not fortunate enough to find the nest.

The birds are somewhat gregarious, being oftenest seen in small parties of six to ten. They sometimes cling against the bark of a tree in the manner of Woodpeckers, but also spend much of their time on the ground. Though extremely similar in general structure to the following species, I think they use the curved bill (3 or 4 inches in length) much oftener for probing in the ground than for searching the bark of trees, as many of those shot had the base of the bill and the frontal feathers plastered with mud. In the stomach of the first one killed I

found the silken sac, three-fourths of an inch in diameter, of the eggs of a large spider, which makes holes ten or twelve inches deep in the hard soil everywhere. In January and February the birds were moulting.

95. **Lepidocolaptes atripes** *Burm.*—A common resident, and doubtless breeds in all the larger tracts of forest. Although nearly ten inches in length, it has the general form and habits of a *Certhia*, hitching restlessly up old tree trunks, and having finished one, beginning at the foot of another, probing everywhere for insects, but never alighting on the ground. Of its nesting habits I know nothing, but was told by natives that both this and the preceding species nested in holes in trees.

96. **Thamnophilus cærulescens** *Vieill.*—Much less common than the following species yet quite frequently seen, especially in winter. I do not think the birds are really any more abundant in cold weather, but as many of the shrubs are then leafless, the thickets are more easily examined and so the birds are more often seen. Both species prefer the densest clumps and most tangled masses of swampy shrubs and vines, where each bird shot was paid for with many a scratch and tear, and often only recovered after a free use of the bush-knife.

A nest taken November 24 was almost precisely like that of our Red-eyed Vireo (*V. olivaceus*), being pensile in the fork of a horizontal spray, only four feet from the ground. It contained three fresh eggs, white, with spots and dashes of light brown. This has been considered one of the rare species of the province, and I found no specimen of it in the museum at Buenos Aires.

97. **Thamnophilus argentinus** *Cab.*—Abundant, summer and winter, and in the same localities as the preceding. The nests are very similar, but that of the present species is rather larger, as are also the eggs, which in other respects are quite similar. The first nest was found February 8, 1880, that is in autumn, and when only one or two other birds were nesting at all. I think this is unusual, however, since no more nests were found until the following spring, when, during November, they were not uncommon. On November 16, I saw young following the parent, and within half an hour found a nest with three fresh eggs, the usual number.

98. **Heliomaster furcifer** (*Shaw*). PICAFLOR MAYOR (LARGER HUMMINGBIRD).—Early in September, at Concep-

cion, when the orange trees are just whitening with blossoms, these magnificent Hummingbirds arrive from the north, and may occasionally be seen about the orange trees in any garden, as well as about blossoming trees elsewhere. The males seemed for some reason to be much less abundant than the females, hardly more than a dozen being seen in an entire season. They probably nest in November and December, and leave for the north again in February or March. A nearly finished nest found November 17, was very similar to that of our own Ruby-throat (*Trochilus colubris*) but larger, and was built in the compound fork of a large limb at a height of over 25 feet from the ground. It was deserted soon after, perhaps as a result of my examination. Ten days later another nest was found saddled on the topmost horizontal limb of a dead and moss-grown stub, only about seven feet from the ground, and exposed to the full force of the sun. This nest contained two eggs nearly ready to hatch. Both nests were beautifully covered with lichens, and the last was lined with the finest of vegetable down. The female made several angry rushes at me before the nest was touched, but as soon as she saw that it was discovered became so shy that it was difficult to secure her. The male was not seen at all. I once saw a bird of this species attack and put to rout a wild Dove which passed near it while feeding, and though the Dove made every effort to escape, the Hummer not only kept up with it easily but darted above and below it as well, and finally both went out of sight in the distance together.

99. **Hylocharis sapphirina** (*Gm.*).— A single specimen of this pretty little Hummer was brought me October 13, 1880, having just been caught in a garden at Concepcion. I did not meet with a second specimen, but from its similarity to the young of the following species it may often have passed unnoticed. At this time I had no fine shot, and was compelled to depend on a blowgun for the taking of Hummingbirds.

100. **Chlorostilbon splendidus** (*Vieill.*). PICAFLOR (literally FLOWER-PECKER).— Very abundant at Concepcion in summer, arriving from the north early in September and departing again in April. Though found everywhere among flowers, they are particularly partial to open ground, flowery fields, gardens, etc., and in October it was not uncommon to have six or eight in sight at once.

On October 26, 1879, while watching a number of them as they passed from flower to flower in a field fairly purple with blossoms, I was startled by the peculiar hiss of a falling bird, and a Sparrow Hawk (*Falco sparverius*), swept the grass a few yards in front of me, having either struck at one of the Hummers or, more probably, at a mouse among the grass. From the velocity of his plunge he shot upward to a height of 20 or 30 feet, empty handed, but soon had his hands full, as three male Hummers devoted themselves to him most unreservedly, and continued their attentions — as was evident from the Hawk's motions — long after their own tiny forms were lost to my sight.

Most of the birds have nests by the middle of November, but, from their being placed very near the ground, many are doubtless destroyed by various enemies, so that nests with eggs are not uncommon late in December.

I feel quite sure, however, that but one brood is reared each season. Nearly every garden has its nest, and often more than one, almost invariably built at the tip of one of the lowest, drooping twigs of an orange tree, rarely more than three or four feet from the ground. When built away from human habitations I found at least three-fourths of the nests under a kind of bushy tree known as the *Coronilla*. I say *under* this tree because the lower branches usually start out from the main stem a foot or two above the ground, while their tips sweep the earth, thus leaving a dome-shaped open space beneath, where there is always a shadowy half-light, and where on some slender, dependent twig the nest is commonly placed. Among a score of nests found in such situations only two or three were more than two feet from the ground, and many were within twelve or fifteen inches of it. The nests are exceedingly various in composition but always consist largely of soft cottony substances, with a lining of fine vegetable down, or fur from various small mammals. The outside is made to "harmonize with its environment," sometimes by leaving it unornamented, but oftener by the addition of moss, leaves, cobwebs, papery bark, etc., all attached very loosely and giving a most picturesque effect.

The eggs in most cases were two in number, rarely of the same size, and not always deposited on successive days. A set before me measure .51 in. by .33 in., and .48 in. by .32 in. I usually found the female on the nest, or close by, and do not remember ever to

have seen a male betray an interest in any particular nest. On removing the eggs (or even one of them) a nest was promptly deserted, but in several cases where the twig was cut off with the nest a new one was soon built on the same tree.

101. **Podager nacunda** (*Vieill.*). DORMILON (SLEEPY-HEAD).— An abundant summer resident, arriving and departing at about the same time as the preceding.

It is strictly crepuscular or nocturnal, never voluntarily taking wing by daylight. In November it lays a pair of spotted eggs in a hollow scooped in the soil of the open plain. These in shape and markings resemble eggs of the Nighthawk (*Chordiles virginianus*) somewhat, but are of course much larger and have a distinct reddish tinge. We found the birds not uncommon near Bahia Blanca, February 17, 1881, but elsewhere on the Pampas we did not observe them.

102. **Chordiles virginianus** *Sw.*— A single specimen was taken at Concepcion January 28, 1880, and eleven months later (Dec. 20, 1880) another was taken on almost the same spot as the first. The first one when started from the ground in a recent clearing tried to alight on the tip of a broken sapling near by and was shot in the act.

103. **Antrostomus parvulus** (*Gould*).— Not uncommon in summer and doubtless breeds. At dusk I frequently saw it about the margins of low woods and thickets where it made only short flights, soon settling on the ground.

104. **Hydropsalis furcifera** (*Vieill.*). TIJERITA-DORMILON (SCISSOR-TAILED SLEEPY-HEAD).— Rather common summer resident, arriving in August and leaving in May. While hunting capybaras and armadillos by moonlight I frequently had good opportunities for watching its movements. Its flight is nearly as irregular and as noiseless as that of a butterfly, while its beautiful tail is opened and shut in the same manner as with the Scissor-tailed Flycatcher. Alighting frequently on the ground or on stones or roots, it keeps up a continual but very soft clucking, which is the only note uttered. It was most often seen in open grassy or sandy spots in the woods, especially along the margins of the streams. By day it sits close on the ground, and if disturbed only flies a few yards, though it evidently sees well. Of its nesting habits and eggs I am ignorant.

105. **? Hemiprocne zonaris** (*Shaw*). SWIFT.— October 5,

1879, a pair of Swifts was seen at Concepcion having the general appearance and motions of *Chætura pelagica*. No specimen was secured, and no others were afterward seen.

106. **Campephilus boiæi** (*Wagl.*).— A part of the last week in April, 1880, was spent in a considerable tract of forest bordering a stream known as the "Arroyo Gualeguaychú" at a point about twenty miles west of Concepcion. The wood borders the stream to a depth of a mile or more on each side and stretches up and down stream indefinitely. It had suffered comparatively little from the axe of the charcoal burner, and many birds, not elsewhere seen, were met with here. Among these was the present beautiful Woodpecker, of which, however, only a single pair was observed, and the male alone taken. It is said to occur sparingly in all the large forests.

107. **Picus mixtus** *Bodd.* — Resident; not common; seen only about a dozen times, usually in low and swampy growths, where its tapping was the only sound heard from it. It was always solitary.

108. **Picus cactorum** *Lafr. et d'Orb.* CARPINTERITO (LITTLE CARPENTER).—Resident. More commonly met with than the preceding, but abundant only on the Gualeguaychú at the place mentioned above.

109. **Chrysoptilus cristatus** (*Vieill.*).—Resident. Abundant in woods everywhere, and conspicious for its activity, bright colors and large size. It is strictly arboreal, but hops about among twigs and small branches more freely than most Woodpeckers of my acquaintance. September 29, two pairs of these birds were seen near holes in inaccessible dead stubs overhanging a stream. The specific name implies a crest, which the bird has not.

110. **Leuconerpes candidus** (*Otto*). CARPINTERO BLANCO (WHITE CARPENTER).—Sparingly resident and doubtless breeds. Its snow-white body, black wings, and noisy habits, prevent its being often overlooked, but it is nevertheless seldom seen about Concepcion, and then only in the heavy timber.

111. **Colaptes agricola** *Malh.* CARPINTERO (CARPENTER). —Abundant and breeding at all points visited. At Concepcion, where it is resident, it is by far the commonest Woodpecker. The ordinary note very much resembles the reiterated alarm note of the Greater Yellow-legs (*Totanus melanoleucus*), but so loud as to be almost painful when close at hand, and easily heard a

mile or more away. They spend much time on the ground, and I often found the bills of those shot quite muddy. They are very tough and hard to kill, and a wounded one shows about as many sharp points as a Hawk. A nest found near Concepcion, November 6, 1880, was in the hollow trunk of a tree, the entrance being through an enlarged crack at a height of some three feet from the ground. The five white eggs were laid on the rubbish at the bottom of the cavity—perhaps a foot above the ground. In the treeless region about the Sierra de la Ventana we saw this bird about holes in the banks of the streams, where it doubtless had nests.

112. **Ceryle torquata** (*Linn.*). MARTIN PESCADOR (KINGFISHER).—Only observed half a dozen times, always in summer. A winged one which fell in the water and was carelessly picked up as the boat passed, closed his powerful bill on my fingers and allowed his lower jaw to be broken before he released his hold.

113. **Ceryle amazona** (*Lath.*).—Not uncommon along the main river throughout the year, and sometimes ascends the smaller streams a short distance. Much more easily approached than the last species, it is not so familiar as the following, with which it fraternizes commonly—the two being often seen fishing side by side.

114. **Ceryle americana** (*Gm.*).—Resident through the year at Concepcion, but especially abundant in winter when it haunts the main river, the island shores, and all the streams, big and little. It is not in the least shy, and one once perched in some willows directly over my boat and not ten feet away, while he swallowed a tiny fish he had just captured; after which he twittered such a hearty little song that I really felt as if his proper place must be among the *Oscines* in spite of all anatomical defects. On the Pampas we found this a rather common bird on the small streams, and its presence on some streams whose waters are entirely absorbed by the desert before they can reach either sea or lake, first called my attention to the presence, even in these streams, of numbers of a small fish which is found in many of the pools as well all over the Pampas. Although both this and the preceding species must nest about Concepcion I did not succeed in learning anything of the nest or eggs.

115. **Guira piririgua** (*Vieill.*). PILINCHO or PEDINCHO (meaning not known).—An abundant resident at Concepcion,

Buenos Aires, and somewhat further south. Its proper home is much further northward but in the last few decades, according to Hudson, it has gradually descended along the great river valleys and spread over the adjacent plains wherever there are trees. At Concepcion these long-tailed and long-legged Cuckoos are usually seen in flocks, which rise with harsh screams when disturbed, and flap slowly off with frequent intervals of sailing.

On the ground they run with much ease and it is a very pretty sight to see a flock of them glide down a few at a time from a hedge to the ground, each one closing his wings as he nears it and, without checking himself at all in the air, gliding forward on his feet so smoothly and swiftly that it is almost impossible to tell when he ceased flying and began running. At such a time many of them carry the long tail almost vertically over the back. They are said to nest in communities, but they certainly sometimes nest singly, though the natives assured me that even then two or more females dropped their eggs in the same nest.

The eggs themselves are very peculiar. The ground color is a clear bluish-green, over which is a net-work of dots, lines and blotches in pure white, the material of which is chalky and not difficult to wash off when the eggs are fresh. Sometimes the ground-color is almost obscured by these white markings, but when—as is often the case—the blue and white are in about equal proportions the eggs are among the prettiest I have ever seen.

December 6, 1879, I took a perfect egg from a female which I shot, but I saw no other eggs until the following year when, during December, about a dozen specimens were brought to me—all taken from "large nests made of sticks up in trees."

116. **Diplopterus galeritus** *Burm.* CRISPIN (imitation of note?).—Not noticed at all the first season, but not rare late in December, 1880. Several were taken in open, bushy places and many others were heard. It is a plain but attractive Cuckoo, with a few-feathered crest and long, soft, flowing upper tail-coverts.

The note is very clear and penetrating, sounding much like the word *cris-pin*, slowly uttered and with the accent on the last syllable. The birds are very shy and I followed one for nearly an hour before I saw it at all, and nearly twice as long before any chance for a shot was offered. There is some peculiarity in the note which frequently makes it impossible to tell whether the bird is in front of or behind you—even when the note itself is distinctly heard. I know nothing of nest or eggs.

117. **Coccyzus pumilus** *Strickl.*—This small Cuckoo with red eyelids was twice taken at Concepcion, once on December 11, and again December 30.

118. **Coccyzus melanocoryphus** *Vieill.* CUCLILLO (CUCKOO).—Abundant from early in November until late in February, after which it was not observed. The first nest was found February 16, 1880, and contained three eggs. This must have been a second nest, as others were found the next season during November. In nest, eggs, and general habits this bird seemed to me precisely like *Coccyzus americanus*.

119. **Coccyzus cinereus** *Vieill.*—A single specimen of this species was taken January 22, 1880. It was not again noticed.

120. **Conurus patagonus** (*Vieill.*). LORO (PARROT).—Only met with near Bahia Blanca, February 14, 1881, and again at Carhué the first week in April. We found it in noisy flocks of twenty or thirty individuals feeding mostly on the ground.

121. **Bolborhynchus monachus** (*Bodd.*). LORITO (PAROQUET).—An abundant and familiar bird in the neighborhood of Concepcion through the entire year. It is commonly seen in flocks of twenty and upwards, visiting grain fields, gardens, etc., and sometimes, if I was correctly informed, it has appeared in flocks of tens of thousands, completely stripping the grain fields. They nest in communities, many pairs uniting in the building of a large common nest or mass of nests. I only saw these nests on two occasions and had no opportunity of examining their structure. They were placed on high trees, and appeared from below to be simply irregular masses, six or eight feet in diameter, formed of small sticks and twigs. Where the nests are abundant the natives destroy the young by hundreds, and the "squabs" when nearly grown are said to be very fine eating. The young are easily tamed and may be taught to articulate a few simple words.

Several other birds of this family undoubtedly occur in small numbers, and with more or less regularity at Concepcion. I heard much about certain "Loros barranqueros" (Bank Parrots), which were said to be common in some localities near the town a few years before, but had been made to desert their breeding places by the continued robbing of their nests, the young, it is said, making very good talkers.

November 6, 1880, I found a nest of three or four very young

Parrots or Paroquets in a sort of pocket in a sand bank some ten miles south of the town. Although I waited patiently for some time in hopes of securing the parents, I saw nothing of them, and on returning a few days later the nest was empty.

The last week in May, 1880, about a hundred Paroquets flew over the town one morning, and although I noticed nothing unusual in their appearance I was told during the day, by two different persons, that these belonged to still another species, well known, but of late years not so common as formerly.

122. **Aluco flammeus** (*Linn.*). LECHUZON (BIG OWL).—Resident; abundant; breeds in lofts of old buildings, etc. A pair had a nest in the belfry of the "Cathedral," and another pair in an old tower formerly used as a mill. Their harsh screeches rang through the deserted corridors of the college every night, that being one of their favorite hunting grounds for bats.

123. **Asio accipitrinus** (*Pall.*). LECHUZON (apparently not distinguished from the preceding by the natives).—Not uncommon in winter, sitting among the long grass during most of the day but beginning to hunt at sunset, or sometimes earlier. I started four or five in a field back of a farm house, May 21, 1880, and on June 18, saw half a dozen or more just before sunset, sweeping about like Harriers over the fields near town. I saw none after August 18.

124. **Bubo virginianus** (*Gm.*). BUHO (OWL) and ÑAKOO-ROO-TOO (the Indian name, referring, of course, to the hoot of the Owl).—Said to be not uncommon in the deeper swamps along the river as well as in the drier forests further back.

I met with it only once,—at the camp on the Arroyo de Gualeguaychú. Here a pair or two were within hearing every night and I dropped one just at dusk, but it unfortunately fell on the other side of the stream in a jungle which I was not prepared to search by moonlight. Mounted specimens in the museum at Buenos Aires, labelled *Bubo crassirostris* were undoubtedly the same thing.

125. **Scops brasilianus** (*Gm.*). CABURÉ. (Name unexplained; it is also applied to a much smaller Owl, probably *Glaucidium*, which I did not see.)—A common resident along all the wooded water-courses, and of course breeds, but I did not find the nest. It has a soft, tremulous cry not unlike that of *asio*, and, as in that species, there are two varieties of color, red and gray.

126. **Speotyto cunicularia** (*Mol.*). LECHUZA (OWL).—Extremely abundant at Concepcion, living with the viscachas (*Lagostomus trichodactylus*), though usually, I think, not in the same holes, but in deserted burrows. At night they were quite common in the town, and I have often seen them perched along the roof-tops and parapets in the gray of early morning. The fixed stare with which they follow a person's motions, in broad day, is illustrated by the following concise directions commonly given to young foreigners who come out to make money at farming. "Walk slowly around the bird until you see his head twist off; then pick him up."

127. **Circus cinereus** *Vieill.* GAVILAN (HAWK).—Only met with on the Pampas, and especially in the neighborhood of the Sierras and the streams to which they give rise. It was not uncommon near Bahia Blanca in February, and was easily distinguished from the following species, both by its lighter color and smaller size. In habits, also, there was quite a difference, the present species being rarely seen at any considerable distance from water, and sitting for hours on the sandy or muddy bank of a stream whence it would rise only when closely approached. We saw it frequently at the Ventana, on the Piqué and at Carhué.

128. **Circus maculosus** *Vieill.* GAVILAN (HAWK).—We met with this Hawk quite frequently on the Pampas throughout the whole of January, February, and March. It does not appear at Concepcion in any numbers until cool weather begins in March.

During April and May it was very abundant there, scores of them being frequently seen during a day's shooting. It was very familiar, and frequently flew around me within a few yards as if out of simple curiosity. In habits it did not seem to differ very much from our own Marsh Harrier (*Circus cyaneus* var. *hudsonius*). Of its breeding habits, however, I learned nothing.

129. **Asturina pucherani** *Scl. et Salv.* ALCON (FALCON).—Rather common in winter; almost always found close to the shore of some stream. During April, May and June, it was a rare thing to spend an hour in a boat anywhere and not see one or two of these Hawks. It feeds largely, if not exclusively, on fish, nearly every specimen opened having their remains (and nothing else) in its stomach.

(*To be continued.*)

# BIRD NOTES FROM LONG ISLAND, N. Y.

BY WILLIAM DUTCHER.

1. **Passerculus princeps.** *Maynard.* IPSWICH SPARROW.—While collecting, January 1, 1883, on Jones Beach* ; I was fortunate enough to secure four specimens of this Sparrow. The first one seen was shot while running through the short beach-grass, between two sand-dunes. The others were flushed in similar localities and shot while flying. Another was seen but escaped. February 14, 1883, the gunner who usually accompanies me on my collecting trips, shot on the same beach two more specimens, which he sent me. He wrote that he saw one other, which he could not secure. February 22, 1883, I again visited this beach and saw two more specimens, both of which I secured. The following measurements were carefully taken while the birds were in the flesh :

| *Sex.* | *Extent.* | *Length.* | *Wing.* |
|---|---|---|---|
| ♂ | 6.12 | 10.00 | 3.00 |
| ? | 6.25 | 10.00 | 3.06 |
| ? | 6.25 | 9.50 | 2.88 |
| ♂ | 6.25 | 9.75 | 3.00 |
| ♂ | 6.50 | 10.25 | 3.06 |
| ♂ | 6.00 | 9.50 | 2.88 |
| ? | 6.00 | 9.75 | 3.00 |
| ♂ | 6.00 | 9.50 | 2.88 |
| Average | 6.17 | 9.78 | 2.97 |

2. **Poœcetes gramineus** (*Gm.*) *Baird.* GRASS FINCH.—One was taken February 22, 1883, on Jones Beach. It was not in company with the Ipswich Sparrows, taken the same day and in the same locality. Noted as being an early date.

3. **Melospiza lincolni** (*Aud.*) *Baird.* LINCOLN'S FINCH.—Three individuals of this species were killed by striking Fire Island Light the night of May 9, 1882, and were sent me. The testes of two dissected were well developed. I have never taken

* Jones Beach is part of the Great South Beach of Long Island, distant about 28 miles east from New York City.

this species on Long Island while collecting. It was not included by Mr. Giraud in his list published in 1844,* but was by Mr. G. N. Lawrence in his catalogue published in 1866.†

4. **Herodias alba egretta** (*Gmel.*) *Ridgw.* AMERICAN EGRET.—August 3, 1882, Nelson Verity, a gunner, shot on the marshes at South Oyster Bay, and sent me, a male of this species. He tells me that they usually arrive about August 1, and remain until the latter part of September. In the course of the season he sees, perhaps, 25. During the summer of 1882 a few were shot, a lad killing two in one day. Verity also tells me that they are invariably found in company with the Great Blue Heron, *Ardea herodias*.

5. **Garzetta candidissima** (*Gmel.*) *Bp.* SNOWY HERON.—July 11, 1881, while on the marshes at South Oyster Bay, I saw seven individuals of this species, but they were so wild I could not get a shot at them. On the following day I saw but one. July 17, Nelson Verity, a gunner, killed three, one of which, a female, he sent to me. Verity afterwards informed me that his father, who is also a gunner, killed seven on the same marshes in one day, later in the summer of 1882. About July 1, 1883, Verity saw a flock of five near Fire Island, and on the 3d of July he shot one on the South Oyster Bay marshes.

6. **Macrorhamphus griseus scolopaceus** (*Say*) *Coues.* RED-BELLIED SNIPE.—A female of this species was shot September 19, 1882, by a sportsman stopping at "Lane's" on Shinnecock Bay, who kindly presented it to me. September 26, 1883, I secured another in the same locality. The gunners about Shinnecock Bay claim that they can distinguish the note of this bird from that of its congener, *Macrorhamphus griseus*. The measurements of these two specimens are as follows:

| *Length.* | *Extent.* | *Wing.* | *Gape.* |
|---|---|---|---|
| 11.87 | 19.00 | 6.00 | 2.75 |
| 11.00 | 18.50 | 5.75 | 2.50 |

7. **Pelidna subarquata** (*Guld.*) *Cuv.* CURLEW SANDPIPER.—A specimen of this species was shot by Charles A. Lane at Shinnecock Bay and sent to me. He wrote, "The Snipe

* The Birds of Long Island. By J. P. Giraud, Jr. 1844.

† Catalogue of Birds observed on New York, Long and Staten Islands, and the adjacent parts of New Jersey. By Geo. N. Lawrence. 1866.

I send you was shot May 24, 1883; it was alone. Neither my father or either of my brothers ever saw one before." I may add, that Capt. Lane, the father, has been a professional gunner, on the south side of Long Island, for over forty years. His three sons are also professional gunners.

8. **Phalaropus fulicarius** (*Linn.*) *Bp.* RED PHALAROPE. —May 19, 1883, I received from Geo. A. Lane, of Shinnecock Bay, a Red Phalarope that had evidently been shot some three or four days. He wrote me, "The bird was alone. I never saw but one before."

9. **Lobipes hyperboreus** (*Linn.*) *Cuv.* NORTHERN PHALAROPE.—May 24, 1883, Geo. A. Lane, sent me some specimens of this Phalarope. He wrote, "There have been more Phalaropes this spring than I ever saw before. My brothers killed nearly 50 and sent them to market with other Snipe." Subsequently, while at South Oyster Bay, I questioned some of the gunners regarding the flight of Northern Phalaropes this spring, and ascertained that on the 23d and 24th of May there was a large flight of them. Three gunners said they shot about 20, and then desisted because they did not want any more. They remarked "that they were very gentle, almost always alighting among the decoys, swimming lightly and gracefully about." The very unusual number of these birds found on Long Island this spring may possibly be accounted for as follows: During the northward migration they were driven out of their usual course by head winds. The facts are these: On the 18th of May it commenced to blow from the north-east and continued blowing from that quarter to south-east steadily until the 21st, when it culminated in an easterly storm which lasted about twenty-four hours. On the 23d and 24th, the Phalaropes were seen, but disappeared as suddenly as they came. They are more commonly seen in the fall, but then only occasionally.

10. **Steganopus wilsoni** (*Sab.*) *Coues.* WILSON'S PHALAROPE.— Mr. Charles E. Perkins, of Hartford, Conn., wrote me: "While at Shinnecock Bay, L. I., August 20, 1883, I shot a bird which none of the gunners recognized, and I ordered it sent to you. I should like to know what it is." It proved to be a Wilson's Phalarope. Subsequently one of the gunners informed me that a similar bird was shot a few days later by another sportsman, but he could not secure it for me.

11. **Chen hyperboreus** (*Pall.*) *Boie.* SNOW GOOSE.—October 8, 1881, a young bird was shot at Shinnecock Bay by C. A. Lane, which he sent me. In answer to a letter requesting information about the circumstance, Capt. Lane wrote: "The bird was alone. I have never shot any, and have seen only one prior to the one sent you, nor have either of my sons shot or seen any before." Nelson Verity, gunner, of South Oyster Bay considers them very rare, but remembers having seen a few. Carman Cornelius, gunner, of the same place, does not recollect having seen one on Long Island for twenty years. He is familiar with this Goose, having seen them in numbers in North Carolina, where he has been employed for many winters by one of the clubs.

12. **Sterna anglica** *Montag.* GULL-BILLED TERN.—I became the fortunate possessor of a male and female of this species July 4, 1882. While on an extensive mud flat, on the inside of the beach, at South Oyster Bay, Nelson Verity called my attention to the cry of a pair of Terns that were flying past. He winged one so that it fell some distance off. Its mate would not desert it, so was easily secured. On examining them Verity said they were the first he had ever seen. Giraud says,* "In this vicinity it is rare; during my excursions I have never met with it."

13. **Sterna caspia** *Pall.* CASPIAN TERN.—During a collecting trip to Shinnecock Bay, in September, 1882, I saw six individuals of this species, three of which I secured. None of the professional gunners about the bay knew what they were, and but few of them had ever seen any before. They are birds that would be likely to attract attention, from their large size, large, bright coral-red bills, and peculiar cry. The first specimen procured, September 7, was one of a pair, an adult male and a young bird, the former of which came near enough for me to break a wing and thus secure it. The next pair were seen and taken on the 13th. They, too, were an adult and young. Before they were seen, the harsh rolling cry of the adult was heard, and also the sharp whistle of the young bird. The old bird came near enough to shoot, and my gunner, Geo. A. Lane, called back the young bird by imitating the whistle of the Esquimaux Curlew (*Numenius borealis*) which was a perfect

* The Birds of Long Island, pp. 353, 354.

reproduction of his own cry. The third pair I saw on a sand-bar at Shinnecock Inlet. They were in company with some American Herring Gulls. They also were adult and young.

14. **Alle nigricans** *Link*. SEA DOVE; DOVEKIE.—December 7, 1882, Mr. C. A. Blydenburgh, first assistant keeper of Fire Island Light, sent me a female of this species, which he found dead on the beach. Ten days later he sent me another, and wrote as follows: "I found one Sea Dove which I will send you with this. The men at the Life Saving Station had three Sea Doves before I got one. One of the men from the next station east told me they found one this winter. That makes six picked up along here." In answer to an inquiry, Mr. L. S. Foster, of New York City, wrote me as follows: "My Long Island information concerning 752, *Alle nigricans*, is as follows: The specimen in my cabinet 'was caught on my patrol, in my midnight watch, the night of the 23d of December, 1881. June Bishop, Life Saving Station, off Centre Moriches, L. I.' One was found dead in the meshes of a net near the same locality, November, 1882. One was brought on the cars of the Long Island railroad at Bayport by a gunner, November, 1882, 'having been shot in a pool.'"

## *DENDROCOPOS PURUS*, A NEW SPECIES OF WOODPECKER FROM KAMTSCHATKA.

BY LEONHARD STEJNEGER.

**Dendrocopos purus**, n. sp.

DIAGN: Similis *D. majori* (L.) a quo differt: pectore et abdomine superiore purissime albo, rectricibus lateralibus albis fere immaculatis et pogonio externo remigum primarium longissimarum apice albonotato.

HAB: Kamtschatka; accid. Insula Beringii.

This species is closely related to *D. major* (L.) but differs in having the breast and upper abdomen very pure white, the white of the lateral rectrices without or almost without dark markings, and possessing a white spot on the outer web of the longest primaries near the tip.

The types of this form, two males and one female (U. S. Nat. Mus. No. 92701, 92702 and 92703), were collected by me on Bering Island, off the

coast of Kamtschatka, where this bird is rather common and whence it accidentally visits the said island. It is the *Picus major* of Kittlitz (Denkwürd. Reise, I, p. 321).

The greater purity of the white of the lower surface and the greater extent of the same color on the lateral tail-feathers distinguishes this species easily from its allies. In the description of *T. cissa* Pallas expressly says that the lateral rectrices are white "nigro transversim variegatae" and "pectore sordescente." Specimens of *D. major* from Central Europe, the only ones at present accessible to me, have the lateral tail feathers strongly barred, and lack the white spot near the tips of the outer web of the longest primaries. These markings are, however, also found in *Dryocopos japonicus* (Seeb.), but the Japanese bird has a very dark lower surface, and transverse markings in all the lateral tail-feathers; besides, the Kamtschatkan form has a stouter and longer bill.

*Dryocopos purus* is especially conspicuous for the uniform white color on the lateral tail-feathers. In two of the specimens are seen some traces of transverse bars on one or both of the two external feathers, but no traces of similar bars or spots are found on the two following pairs.

There is a possibility that the different forms of *D. major* may be found to intergrate so as to become only races. *If that can be proved*, the names would stand as *Dryocopos major*, *D. major cissa* (Pall.), *D. major japonicus* (Seeb.) and *D. major purus*. But until this question is satisfactorily settled the above binomial appellation will stand.

U. S. National Museum,
Washington, D. C.

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## THE COUES LEXICON OF NORTH AMERICAN BIRDS.

BY AUGUSTUS C. MERRIAM.

THE "Coues Check List and Lexicon of N. A. Birds" (1882) deserves in one of its features some further consideration than appears yet to have been given it. This feature is its philological treatment of the nomenclature of ornithology. Dr. Coues has here entered upon a field which has long demanded attention. Scientific nomenclature is becoming so vast and so important, and the haphazard way in which much of it has been coined and applied is so provoking, that it imperatively commands from its votaries intelligent and scientific review. Living vernaculars

usually grow with numerous inconsistencies and incongruities, which must be accepted as they stand by the student of language; but in a vocabulary which is constructed by scientific men for scientific uses, there ought to be scientific precision and analogical correctness, at least in the formation of the words. Since it is agreed that the Greek and Latin languages shall be the mine from which this nomenclature is to be drawn, the several structures should be built strictly upon the analogies of those languages. In order to secure this end, the framers of words must be possessed of a competent knowledge of those languages, to give them secure and accurate results. Not only is this true of word-framers, but in a less though essential degree of word-users, — in short, of all the votaries of modern science, of which ornithologists have become an important part. If all ornithologists cannot become proficient Greek and Latin scholars, they can and ought to acquire such an acquaintance with their terms that they may be able to handle them with ease and assured exactitude; for there is scarcely an ornithologist who has not already been confronted by the problem of making known his discoveries in print, or hopes to do so at no distant day. That is the moment beyond all others when his desire mounts to a positive passion to know how to express his thoughts in a manner worthy of himself, of his discovery, and of the beautiful science which he loves. Hence, if he has never made the matter a study before, he will wish to do so then, and desire just such a production as Dr. Coues has set out to place at his disposal. He will wish to know not only what the terms are, but why they are so and so, or else he possesses no true scientific spirit, none of that divine seeking which longs to be right and know why it is right — that divine seeking which absorbs and masters every true devotee of nature and its countless marvels. How necessary is it then that he should be rightly taught, that the information laid before him should be as accurate, and conceived in as scientific a spirit, as the knowledge of the day will permit.

When we turn to the philological portion of Dr. Coues's work and examine it with these principles in view, we find it open to criticism in numerous particulars. The plan is excellent, and the great majority of the derivations are correct; but the treatment of some of the most essential points which should form the initial training of the word-constructor and word-expounder is erroneous

and misleading. To show this with as much clearness and detail as a limited space will permit is the purpose of this article.

Since a very large part of the ornithological vocabulary is composed of compound words, it is indispensably necessary that the student and teacher should have a clear idea of the processes which the genius of each of the two languages employed in welding words together. Of this the work before us often betrays but vague and indefinite notions. For instance, in No. 56 we read, "Auriparus. Lat. *aureus*, golden, from *aurum*, gold; and *parus*, a titmouse. . . . A more strict method of compounding *aure-us* with *parus* would give *aureiparus;* but it may be taken direct from *aurum*, making *auriparus* admissible; as we should say 'gold-tit,' like 'bush-tit,' 'coal-tit.'" But it is a mistake at the outset to say that *auriparus* is derived from *aureus;* it has nothing to do with this adjective, but is made direct from the noun *aurum*. Some one hereafter, relying on Dr. Coues's statement, might propose to write *aureiparus*, thinking that to be the only strictly correct form. In like manner, in No. 84, we have a similar treatment of the corresponding Greek for gold:—"Chrysolaema. Gr. χρύσεος, golden, from χρυσός, gold." Again, this would make *chryseolaema*, not *chrysolaema*, which is made from χρυσός immediately. The error here seems to arise from the supposition that the first element of the compound ought to be an attributive form—adjective or genitive—in order to obtain the adjective meaning. But when a noun precedes a noun in composition it regularly assumes the sense of an attributive by the law of composition, as Dr. Coues himself shows in his "bush-tit," etc. An adjective or genitive form is therefore superfluous, a principle which will also apply to the correction of *Sayornis* (377) to *Sayiornis*. The word is not improved by the change.

On the other hand, we have a general principle for the orthography of a certain class of words evolved somewhat in this way (42, 311):— In Latin words, the terminal vowel of the first component before a consonant should be *i*, unless the second component is a participial form; then it should be *o*, because it is the ablative, and we are to say *albocaudatus*, *albolarvatus*, *atrocristatus*, *fuscocaudata*, *rufovirgata*; but *flaviviridis*, etc.

A question of this kind can be properly settled only by examining the usage of the Latin language in this particular. Taking

Harpers' 'Latin Dictionary' (1879) as fair authority for the form of all words of the classic period, and in some cases embracing authors as late as 600 and 700 A. D., we find the following compounds in which the *o* is used: — *Unomammia*, *merobibus* and *sociofraudus* in Plautus, *viocurus* in Varro, *primopilus* (for the usual *primipilus*), *sacrosanctus* in Cicero, *Ahenobarbus* in Livy, *Forojuliensis* in Tacitus, *Forocorneliensis* and *primogenitus* (?) in Pliny, *rumpotinus* and *rumpotinetum* in Columella. These belong to good writers; the remainder occur from 150 A. D. to 650. They are, *albogalerus*, *hamotrahones*, *primogenitalis*, *albogilvus*, *tunicopallium*, *primocreatus*, *limocinctus*, *Murocincta* (?), *mulomedicina*, *mulomedicus*, *mulocisarius*, *obliquoloquus*, *tertiocerius*, *quartocerius*, *Vergiliocento*, *homocidalis*, *oleomella*, *ceroferarius*, *martiobarbulus*. The most thorough examination would not increase this list materially, among genuine Latin words, and the smallness of the number as compared with the thousands of words which employ *i* instead of *o*, shows how foreign to the real genius of the language the *o* is. In hybrid compounds there is a tendency to the use of *o*, whether the first or second component is Greek, and of course in genuine Greek words *o* is the prevailing letter, so that, if not a survival, it may be through the influence of Greek literature that the *o* crept into this very small corner of the Latin field. At all events, an examination of the words given above shows that the idea of an ablative is quite inadmissible in the large majority of them, and consequently that the Romans had no consciousness of it in the others; besides, if they had, they would have written *aurofluus*, "flowing with gold," instead of *aurifluus*, and countless others of similar import and form. Furthermore, if the *o* represents the termination of the ablative case, it should be long; on the contrary, it is short, according to Kühner (and Dr. Coues virtually abandons his position by marking his short), in the only places where its quantity can be determined; and consequently, the best German authorities regard the letter as *the short final stem-vowel of the second declension*, to which the second component is directly added, as so frequently in Greek. All these considerations render such a rule as that of our author quite untenable, and if any changes at all are to be made in words already compounded, it would be far better to conform to the real genius of the Latin language and write *i* throughout. Dr. Coues has not followed his own rule to its limit,

since he retains *pallidicincta* and *unicincta*. In these the second component is a participle, and he could have supported *pallidocincta* and *unocincta* by *limocinctus* quoted above, if not by Plautus's *unomammia*. In all cases where a genuine compound is formed it is well to keep in mind the principle thus laid down by Roby (Latin Grammar, 979) :— One of "the distinctive features of two words being compounded is the possession of but one set of inflections," and that, of course, at the end of the word, not at the point of junction.

Notwithstanding the small number of ancient Latin compounds with *o*, it is a familiar fact to any one conversant with modern scientific nomenclature that this peculiarity has been adopted and fostered to an extent that would have made a Roman stare. But it is mainly within the present century that this growth has taken place. In names, Linnæus writes the *o* a few times only, and scarcely at all among bird-names, unless the compound is a hybrid. Occasionally he will employ it when he attaches two adjectives together by a hyphen, which indicates that he does not regard them as a genuine compound. The same sparing use is apparent in the editions of Gmelin and Turton, but during the next half century the crop that springs up is large and thrifty.* The index of Gray's 'Genera of Birds' (1849) contains more than a hundred names with *o*, and considerable additions must have since been made. Little if anything can be said in favor of this *o* in ornithology; but in chemistry, where the slight but important distinctions in different compounds is to be marked, the *o* has been utilised to some advantage, so that ferr*o*cyanide and fer*ri*cyanide stand side by side to indicate the distinction of a single atom of metal. This is both legitimate and ingenious, which cannot always be said of its usage.

* The real genesis may be this. The Latin language was poor in words of color, and lacked definiteness and distinctness in such as it did possess. Naturalists have accordingly found it necessary to eke out the scanty stock by uniting two or more epithets, and in order to stamp such as mere agglutinatives, not regular compounds, they joined the elements by a hyphen, with *o* as the final vowel before the hyphen. Such or similar forms were gradually transferred from the language of description to the list of names, where the hyphen was sometimes retained, sometimes dropped, especially within more recent days. In ornithology it has disappeared almost entirely, but Paxton's 'Botanical Dictionary' (1868) shows it to be still employed in Botany in a large proportion of the compounds which are written with the *o*, and we see it occasionally elsewhere.

It is a pretty comprehensive rule in both Greek and Latin that the final stem-vowel, or so-called connecting vowel, disappears by elision before an initial vowel of the second element, except in Greek before words which originally began with the digamma or some sibilant, as εἶδος, ἔχω, etc. This exception in the ornithological vocabulary is chiefly confined to the ending *-ides*. But in No. 305 we read as follows: — "Megal'ŏnyx. The word is commonly accented on a long penult; a practice perhaps defensible on the ground that *megalo-ŏnyx=megalōnyx*." This implies the contraction of the two short concurrent vowels into one long; but nothing of the kind takes place here; or if it did, Greek rules would require the resultant form to be μεγαλουνυξ, which should be transliterated *megalunyx*. If, however, it is desirable to make the penult long, it might be done upon a different principle; for several of the compounds of ὄνυξ, all in fact in Homer, have ω instead of *o*, as κρατερώνυξ, a peculiarity which is due not to contraction but to metrical needs, and the ω forms are often found in prose. Still, the short penult is common enough, and the Roman poets employed it in *sardŏnyx*.

Again, (453): — "Melanerpes. Gr. μέλας, genitive μέλανος, black, and ἕρπης, a creeper. The full form would be *melanoherpes*." Not so. In a word formed like this upon Greek models the *o* disappears before the vowel, and the aspirate vanishes also. In composition, it is only when the aspirate comes in contact with a preceding *p*, *t*, or *k*, that *h* is to be used to represent it, as in *Catherpes*. Dr. Coues's principle might lead to the coining of other monstrosities like *Philohela*, which should have been *Philela*, or better, *Helophila*.

In No. 799 we read: "Macrura. The word is often written *macroura*, and defensibly so, the full form being *macrooura*. But it is permissible to shorten *oou* into long *ū*, as we habitually do in *leucurus* for *leucoourus*." The "full form" can have no existence. The "*ou*" as "often written," is the transliteration of the Greek diphthong ου by two corresponding letters, as many classicists now insist that we shall write Mousaios instead of Musæus; but according to Dr. Coues's system, p. 14, ου becomes *u*.

No. 531. "Thrasyaë'tus. Gr. θασύς and ἀητός. Generally written *Thrasaëtus*, as originally by Gray; but the above is preferable; compare *Thrasyas*, *Thrasybuius*, *Thrasymachus*, etc., all

retaining the *y* (υ)." "Thrasybulus, Thrasymachus" have nothing to do with the question, which turns upon the retention of the *y* before the vowel of the second component. It is a fact that υ is usually an exception to the rule propounded above for elision, and for this reason it is likely that the first component is not θρασύς but θράσος, as we find in *Thrasokudoimos*, *Thrasippos*, θρασανυχήν. Hence, the correction from *Thrasaëtus* is open to objection.

It is to be remembered that if the second component begins with a vowel, that vowel remains, while a preceding one vanishes. Hence the division "*muia-rchus*" (377, cf. 819), for mui[a]-archus is wrong from that point of view. The inventor of *Muiadestes* seems to have been ignorant or neglectful of this principle, if the composition is μυῖα ἐδεστής, as is probable. The form should have been *Muiedestes*.

If the stem of the first element ends in a consonant, a connecting vowel is regularly needed, unless the second has an initial vowel. In No. 384 we find *Empidonax* derived from the stem ἐμπιδ- (gnat) and "ὤναξ or ἄναξ, king." If it could be made from ὤναξ, *Empidōnax* would be correct. But ὤναξ is a contracted vocative of ὦ ἄνεξ. " O king," which would be the strangest possible form to compound with. If from ἄναξ, *o* would naturally disappear, and *Empidanax* should be written (cf. Hydr-anassa, Dichroman-assa), unless modeled upon archaic forms. If we are left by the inventor to guess, a more reasonable derivation would be from the stem ναγ- of νάσσω, "to squeeze," and we arrive at the meaning "gnat-squeezer," instead of "gnat-O-king."

The so-called connecting vowel *i* in Latin is regularly short, and it is pretty well agreed among scholars that vowels naturally short were pronounced short in prose, even before two consonants, except before *ns*, *nf*, where Cicero explicitly states that they were pronounced long. Certainly the short vowel retains its quantity before a mute followed by the liquids *l* or *r*. Though these principles are laid down in part, p. 16, and recognized with some hesitation under No. 126, and again alluded to in 150, the writer is, notwithstanding, induced to mark the penult of *rubrifrons*, long, and accordingly to place the accent upon it, being led astray by the false analogy of *rubrīco*. This, however, is derived from *rubrīca*, which has the *i* long under the general rule that nouns ending in *-ca* lengthen the penult. Hence the quantity of the *i* in *rubrico* has nothing to do with that of *rubrifrons*, which is short, as Dr. Coues marks in *lŭnĭfrons*, etc.

In the next number (151), we are told that "the connecting vowel *o* (of *Setophaga*) need not lengthen before *ph*." Change "need not" to *must not*. Neither the Greek aspirate nor the corresponding Latin *h* has any effect on the quantity of the preceding vowel, according to Greek and Latin rules, and Dr. Coues's quantities are regularly marked by such rules. "Need not" leaves open the possibility of the long vowel. Is it in obedience to this possibility that we have *Pētrōchelidon* in 162, *Zonōtrīchia* in 275, *leucō'phrys* in 276, &c., or are they typographical errors, which are plainly quite frequent?

The *c* of *Tephrocotis* (203) is declared to be a "connective consonant." Unless the originator of the word asserts that he resorted to this daring expedient, it would be best to seek some easier solution of the problem. κοτίς, "head," suggests itself as the probable form for the second element.

A frequently recurring example of what in these days of comparative philology is regarded as vicious teaching consists in declaring that Latin words which are only cognate to the Greek are derived from it, as *-ceps* from κεφαλή (56), *Hirundo* from χελιδών (159), *nebulosa* from νεφέλη (476), etc. That these are kindred forms is true, but for their origin we must look to some common Aryan stock from which each developed its special form after the separation of the Italic and Hellenic tribes. Some Latin words, of course, have been imported from the Greek in historic times, and such may be properly said to be derived.

The notion that the Greek is older than the Latin appears to have led to the introduction of some useless lumber. So long as the Greek contains a word cognate to the Latin and used in ornithology, it is well to have it cited for the information of the learner. Indeed, I should go further, and adduce the derivative or cognate word in English wherever we chance to have one. But such summer-day saunterings as appear in No. 306 might have been omitted to advantage. Within the same language, too, we find unnecessary material. To be more explicit, it may be asked what is the service, when deriving *familiaris* from *familia* (62), of adding, "or older *familias?*" Such a piece of information does not assist the learner; or rather, would not do so, even if it were a fact. *Familias*, however, is not an older form of the nominative *familia*, but an archaic form of the genitive for *familiae*. Again, in No. 166:— "Ampelis. Gr. ἀμπελίς or ἄμπελος." There is no

alternative here. *Ampelis* must be direct from ἀμπελίς, and ἄμπελος is best omitted altogether.

The lack of clear logic, incisive statement, and proper arrangement in the process of derivation confronts one continually. *Helminthophaga* (98) is derived from ἕλμις. This, however, does not have the stem ἑλμινθ-, but ἑλμι-. *Galeata* (684) is deduced from *galea*, and that from *galeo*. The order should be, *galeata*, *galeo*, *galea*. "Cyanocephalus (332). Gr. κύανος, or Lat. *cyaneus*, blue." Omit "Lat. *cyaneus*," and this would be correct. "Cyaneus (489). Gr. κύανος, Lat. *cyaneus*." Read Lat. *cyaneus*, Gr. κυάνεος, from κύανος. "ἡμι (586), a contraction of ἥμισυς." The former is the root-word, of which the latter is an extension. "Gr. νήττιον (715); contracted from νηττάριον, a diminutive of νῆττα." The two first are separate diminutive forms of the last.

The etymologist and lexicographer must keep in mind that a large and important factor in his work is the proper historical treatment of his words. Derivations and meanings must be traced back through all their phases, and a proper sequence in time or usage must not be violated. Dr. Coues is sometimes not very successful here. *Aurum* in 326 is, by inference, derived from Gr. αὖρον, which chances to be a mere transliteration from the Latin, and not found till towards the downfall of the Roman empire. "Falco (498). Gr. φάλκων, Lat. *falco*, from *falx*." *Falco* is cited as in use at least as early as the second century A. D. in Latin, but φάλκων does not occur till some 800 years after, and it must be simply a late Greek transliteration of the Latin word. Our word Harpy is referred (17, 531) to ἅρπη, "a sickle,"—from the *crooked beak*. In reality, Harpy comes from ἅρπυια, a quasi-participial form from the root of ἁρπάζω, "to snatch," and in Homer, where the word first occurs, it is a dim personification of the storm-wind or hurricane, with no element of the bird-form about it, and at all times it was habitually represented with the human head. ἅρπη, on the other hand, in Homer is some bird of prey, named from its raptorial habits.

*Motacilla* (86) is explained as a hybrid from *mota-* κίλλω. We have hybrids enough, certainly, without increasing the list unnecessarily. *Motacilla* is a word used by Varro who wrote in the last century before the Christian Era, and it is cited by him as undoubtedly an old and common word of the people. We cannot suppose, then, that the Italian people, who knew no Greek,

compounded a hybrid word, the Greek part of which is not even a current Greek verb. However, there is a Latin verb *cillo*, "to move," by the use of which we might escape the hybridism. But it is more natural to suppose that *-cilla* is simply the diminutive termination added to the stem of *mota-re*, as *novacula* from *novare*, with a termination like that of *oricilla* for *auricula*. Varro's employment of the word in the midst of several bird-names with diminutive terminations points also to this conclusion, and a gloss of Cyrillus's explains σεισοπυγίς by *moticella*, *motacella*, where the diminutive cannot be mistaken. Still, there seems little doubt that some of the ornithologists have formed their words upon the supposition that *cilla* meant tail, and some philologists array a Sanscrit cognate in its favor.

However this may be, *motacilla* is a genuine Latin word, and we pass on to something of a curiosity in logic, by which it is sought to go back of the derivation given by the inventor of a word and find something better for it. Audubon is said (594) to have invented *Aphriza* and to have derived it from ἀφρός and ζάω. Our author inclines to follow Wharton (who, we will hope, did not know Audubon's paternity) and derive from ἀφρίζω.

Dissatisfaction is expressed with the reference of *Numenius* (643) to the Greek νουμήνιος, "the narrow arcuate bill being likened to the new crescent moon," and it is suggested that the word may come from the Latin *numen*, although the "ornithologists of the heroic age" knew very well that νουμήνιος was a common Hellenic bird-name in the time of the old Greek Diogenes Laertius. But suppose we grant that the derivation from *numen* is possible (?), and assume that *Numenius*, which is not a classic Latin word, means the "nodder," the following does not seem very clear:— "Whichever of these derivations we approve, they amount practically to the same thing; for *numenius* certainly refers to the shape of the bill."

In the next case it will be necessary to transcribe a rather long note in full.

"313. Mō-lō'-thrūs ā'ter. *Unde derivatur?* The orthography and etymology of *molothrus* are alike in dispute. Swainson himself says '**μολοθρος**, *qui non vocatus alienas aedes intrat*'; that is, an uninvited guest. There being no such Greek word as **μολοθρός**, but there being a good Greek word **μολοβρός**, meaning one who roams in quest of food, a vagabond, a beggar, a parasite, a

'tramp' (as we should say now), and therefore exactly answering to Swainson's explanation of his *molothrus*, it has been supposed by Cabanis that Swainson meant to say *molobrus*, and the word has consequently been changed. Though this is very true, it is also to be observed that Swainson wrote *molothrus* more than once, showing it not to be a misprint or other mistake, and that, further, it is quite possible to construct the word *molothrus* from μῶλος and θρώσκω (θορεῖν, θόρω, θύω), and answer all the conditions of Swainson's definition; *molothrus* being, in this case, a bird which takes uninvited possession of other birds' nests, and there leaves an alien egg in mockery of the rightful owners. We therefore see no necessity to replace *molothrus* by *molobrus*. The first *o* is marked long as being Gr. ω, the second as lengthened by position."

If any one will take the trouble to consult the Greek 'Thesaurus' of Stephanus, edition of 1822, he will find there in its proper place the following:—"μολοθρός, *qui non vocatus alienas aedes intrat.*" The word is introduced into the 'Thesaurus' on the authority of Suidas who gives it without explanation, and of Apollonius who cites the feminine μολοθρή in his Homeric Lexicon as an explanation of the Homeric βλωθρή. Editors of Suidas now incline to read μολόθουρος, a plant, for μολοθρός, and in the later edition of the 'Thesaurus' Dindorf conceives μολοθρή, to be an invention of the Grammarians. Swainson, however, had the authority of the great lexicon of the day for his word and its meaning, whatever may have been its real status in the language, and was quite justified in his use of it. The fault, if anywhere, rests with the lexicographers, and Swainson's word should stand as he gave it.

*Aix* (719) has been written as a dissyllable, notwithstanding some misgivings on the part of the author. Though the earliest application of the word may be in doubt, it certainly has been regarded both by tradition and by the commentators on Aristotle as a monosyllable. There is no hint of any other view in the MSS. of that writer, and Gaza translates by *capella*, "the little goat." Gaza, it will be remembered, was a learned Greek who fled from Constantinople upon its capture by the Turks, and took up his abode in Italy, where he devoted himself to the diffusion of a more accurate knowledge of his native tongue, and especially to the translation of Aristotle into Latin. Bringing with him the traditions of the schools as they had been handed down from an-

tiquity, his version is of great importance, and it settles the question raised about *iliacus* (4), for that is the word which he used to translate ἰλιάς (literally "of ilium") which is found in the text of Aristotle as the name of a Thrush, and later authors followed him. Some commentators have preferred to change this reading of Aristotle to ἰλλάς "gregarious," as found in Athenæus, in order to secure the more obvious application of the term. The Aristotelian τριχάς (141) is rendered *pilare*, by Gaza, and *pilosa* by Thomas, thus showing that they derived it from θρίξ. In like manner, his version gives a satisfactory account of *hiaticula* (589). When translating Aristotle's χαραδριός, he says, *quasi hiaticula dixeris*. He was coining a word to suit the radical sense of the Greek.

Some cases have already been mentioned in which the "longer" or "fuller" form was referred to, where the learner should beware of being misled. A few others must not be omitted. Of *megarhynca* (285) it is said, "more exactly to be written *megalorhynca*." Not "more exactly"; for *megarhynca* is made from one stem, *megalorhynca* from another, of the same adjective, both equally legitimate, though the latter is more common. Still, Liddell and Scott give nearly twenty compounds into which μέγα enters. Again, *Spermophila* (296) "is contracted; the full form is *spermatophila*." But the 'Lexicon' cites more than twice as many compounds from the stem σπερμ- as from σπερματ-. "We believe either *mitrephorus* (392) or *mitrophorus* to be admissible; the former has currency though the latter may be preferable." Both forms are found in good Greek writers, the former in early Greek, the latter later. Possession of the field should be more than nine points in its favor under such circumstances. *Thyroides* (449) is referred to θυρεοειδής, and the fuller form is said to be *Thyreoides*, which would be right if the first step were correct; whoever introduced the word, however, is more likely to have taken it from θυροειδής, "door-shaped," at once, if he has not expressly declared to the contrary. The two words were confused early. Of *Dendræca* (111) the full form is said to be *Dendrœcetes*. Yet there are more Greek models for *Dendræca* than for the other form. The ancient compounds of οἰκετής or οἰκητής are very few. And here we may add that of the two, οἰκητής is more likely to be the proper form in ornithological compounds, since this means an "inhabitant," the other almost

always a "slave"; so that the penult of such forms should be long and accented.

This leads us to the correction of the accent of several words. It may be premised that all such corrections are based upon the principles of Greek and Latin quantity, which Dr. Coues habitually follows. If any one choses to say Lophophā'nes (40) for ease of pronunciation, or to emphasize a stem syllable, he starts upon a different basis entirely. He certainly must not suppose that "the *a* in *-phanes* represents two vowels, *ai* or *æ*, as in *phænomenon*, *phænogamous*." Both these words are made from the *present* stem of the verb, which regularly adds an *i* (*e*) to the root of the word, thus presenting the form *phæn-*. Usually, however, in composition the genuine root *phan-* is employed which is naturally short, the *i* being confined to the present system. In fact, it is very largely the rule in Greek compounds that the short root of the verb is employed, and not the lengthened present stem, as in *Troglodȳtes*, *Carpodăcus*, etc. *Thryothō'rus* (68) and *Cistothō'rus* (81) ought not to be from θοῦρος, but from the root θορ-, giving *Thryóthŏrus*, *Cistōthŏrus*, as βουθόρος (Æschylus, 'Supplices'). θοῦρος would transliterate *-thurus*, not *-thorus*. *Pyr'rŭhla* (191) should be *Pyrrhū'la* as taken directly from Aristotle's πυῤῥούλας. (See Gesner, 'Aves,' *sub voc.*). *Oregonus* is accented on both penult (303) and antepenult (263). The word is Latinised, and words in *-onus* in Latin have the penult long. *Molothrus*, *Scandiaca*, *Cantiaca*, *Satrapa* should have a short penult, *Coccygus*, *Aegialites* a long one. *Haliaetus* and the other words containing the same final component are marked with a long penult, although Dr. Coues assumes the prosaic form as the proper one to determine the spelling of the first syllable of that component. In prose all the forms appear with a short penult, and ἀητός is a very rare form indeed, even in poetry; so that it seems hardly consistent to accent the penult on account of this poetic form.

Lastly, we must speak of some of the changes which are noticed by Dr. Coues as having been made in long-standing words. It would seem reasonable to lay down the rule that the inventor of a word has a right to the maintenance of his form, unless some sound objection can be urged against it. If genuine analogy can be shown to support the form, it should not be altered to correspond with something that may be of more frequent occurrence, simply because it is unusual. Uniqueness may be a strong

recommendation to some. If the word is from the Greek or Latin the analogue must be adducible from those languages. Something has already been said upon such cases. To proceed.

Rafinesque is said (96) to have written *Helmitherus*, which is asserted to be inadmissible since it must come from the stem ἑλμινθ- from the nom. ἕλμινς. Accordingly, *Helmintherus* has been written, with a longing for still further change, to *Helmintheras*. But there is another stem, ἑλμι-, used by Aristotle, which, with the addition of *-therus* from θήρ, would give the word of Rafinesque exactly and legitimately. For the form of the second component we have a large number of models, as λεξίθηρος.

*Pelasgia* of Linnæus is objected to (405), and *Pelasgica* substituted in its place. The former is as good a form for the feminine of the adjective in Greek as the latter, and occurs in Æschylus.

Before accepting *plagata* for *plagiata* (527) it would be well to weigh the fact that *plagiare* was used in mediæval Latin in the same sense as *plagare*.

In closing, it may not be amiss to offer the suggestion that a rule be established that hereafter whenever an ornithological name may be coined the inventor shall publish, along with the description of the bird, the derivation of the name and the model upon which it has been constructed, somewhat in this form: —

*Castanogastris* (κάσταναι, γάστρις, "chestnut-bellied"); model, ζωνόγαστρις (Hesychius).

This would serve a four-fold purpose. It would preclude all criticism if properly done, secure more accurate and legitimate words, insure to the inventor the exact form which he has preferred, and save future lexicographers a deal of trouble and vexation of spirit.

## ORNITHOPHILOLOGICALITIES.

BY PROFESSOR ELLIOTT COUES.

PROFESSOR Merriam may imagine with what mixed amusement and consternation we find ourselves sent down to the foot of the class for missing our lesson and kept in after school to learn it. Twenty-five years ago, when Latin grammars and Greek dictionaries looked bigger to us than they do now, the Professor's attitude would have seemed to us

quite natural and proper; indeed we should have admired alike his erudition and his authority. But it is otherwise now that we have forgotten all the parts of speech in learning in the school of linguistic experience that the rules of Latin and Greek grammar are the masters of boyish students and the servants of scholarly men. While it is not necessary for us to stand *super grammaticam* to object to the rule of the ferule, yet, were this position required, we should not hesitate to assume it with entire confidence in our ability to maintain it. We have been too long in the green-room of philology to be deeply affected by the glare of the footlights. Thanking our genial critic for this pleasant reminder of our college days, which brings up the scenes of our youth and almost makes us feel young again; assuring him of the perfect good nature with which we take his shingle full of philological holes, we nevertheless beg to amuse ourselves in turn by playing the professor. We own the soft impeachment of "that divine seeking which longs to be right and know why it is right"; we confess a "positive passion" to learn how to express our thoughts in a manner worthy of ourselves, of the discoveries our critic has made, and of the beautiful science of philology which he loves. Wherefore, we beg to dissent in general terms from the tone and tenor of Professor Merriam's remarks, and to disagree with him in sundry particulars.

(*a*) Professor Merriam's review of the 'Coues Check List of North American Birds,' is a piece of obvious hypercriticism from beginning to end. It is pitched upon a philological E-string instead of the natural A, and then fiddled above the bridge. Every scholar will recognize the skill with which this is done, and we bear witness alike to the care with which Professor Merriam has guarded his points, and the soundness upon which they rest. But it is a canon of criticism, which practised book-reviewers recognize, and which we suspect Professor Merriam has yet to learn, to hold in view always what the author undertook or intended to accomplish, not what the reviewer thinks the author might, could, would, or should have done. For example: We wrote a little book to explain the meanings in English of some 1200 or more foreign words from almost every language under the sun — chiefly Græco-Latin, but also barbarous in every degree of barbarity. We addressed a *clientèle* some percentage of which required to be informed that *caput* and **κεφαλή** mean head, and that the genitive of *caput* is *capitis*, and that **κεφαλή** is *cephale* in Latin letters.* We also tried to patch up or do away with some of the worst atrocities of bird-Latin, as far as the rules of zoölogical nomenclature (which we perceive that Professor Merriam knows nothing about) would permit us to do so, in fact taking liberties in this particular which many zoölogists have already resented. We were furthermore hewing our way where no one had gone before in any systematic manner, with few finger-posts off the common dictionary highway, again and again forced to fall back upon our instincts of philological locality and our linguistic

*In fact, the most serious defect of our 'Lexicon' is, that we did not transliterate the Greek characters.

intuitions, in order to find our way at all. How nice it is, under such circumstances, to hear the rustle of the silken robes of a professorial chair in the following, for instance:—

"A frequently recurring example of what in these days of comparative philology is regarded as vicious teaching consists in declaring that Latin words which are only cognate to the Greek are derived from it, as *-ceps* from **κεφαλή**," followed by remarks upon Aryan stock, the separation of Italic and Hellenic races, and the comparative antiquity of the Greek and Latin languages."

Under the circumstances, this is not only hypercriticism, but pure pedantry. We never declared that Latin words which are only cognate with the Greek are derived from it. We made no declarations upon the thesis of cognation as distinguished from direct derivation. If we had been at an essay on that subject we should have perhaps produced one. All we did, or intended to do, was to adduce *-ceps*, **κεφαλή**, *caput*, *cephalic*, *occiput*, etc., as words referring alike to 'head.'

One more example of this pedantic hypercriticism and we will pass to other matters. Our suave critic remarks with fortitude that "the lack of clear logic, incisive statement, and proper arrangement in the process of derivation confronts one continually" in our little book. He supports this generalization by saying, among other things, that we deduce *galeata* from *galea*, and that from *galeo*, making it appear that we do not know that *galeata* is a participle meaning 'galeated.' In point of fact we deduce nothing of the sort; we make no deductions of any sort. Our words are: "Lat. *galeata*, helmeted; *galea*, a helmet; *galeo*, I crown with a helmet"; all of which we submit is perfectly true. For a case of the Professor's *fortiter in modo, suaviter in re*, let this suffice. To take him on his own ground, however, we beg to state that we do not believe the proper derivative sequence of *galea* and *galeo* to be as he asserts, though we do not propose to discuss whether a verb or a noun is the most primitive part of speech. There are treatises enough on that subject already.

(*b*) Passing to a further point, we beg to instruct our critic in another canon of criticism; which is, to review a book upon its merits as well as upon its demerits. The heart of sound and useful criticism consists not in finding fault, but in correctly adjudging the praise and blame which a book may deserve. It is dangerous for a reviewer to spend a dozen pages of rebuke upon a book for which he has just one line of qualified commendation. Literary men understand this perfectly well; it always makes them suspect the animus of a reviewer — perhaps unjustly. Still the suspicion will enter their minds; there is room to surmise some private grudge, or private purpose; it looks to them like "an attack"; in which case the unpractised reviewer's blunder deprives his most just and conscientious criticism of its due weight, and defeats his own purpose, whatever that may be. Moreover, the average reader gets an idea, somehow, that there must be something remarkable about a book bad enough to be pursued for a dozen pages with "fateful law unredeemed by clemency." We say these things with regret, and only to instruct our critic in the art of criticism; for, as

we have said, we regard his review as a perfectly fair, upright and downright piece of pedantic hypercriticism, to which we have no right nor desire to object, if it suits his fancy to indulge in that amusement. We do not even take the liberty of admonishing him that his "positive passion" for expressing himself on the subject of philology is open to the suspicion of being merely a ventilation of very little learning, on very small provocation, on a very untimely occasion. For example, the Professor says of our work:

"The plan is excellent and the great majority of the derivations are correct; but the treatment of some of the most essential points which should form the initial training of the word-constructor and word-expounder is erroneous and misleading; to show this with as much clearness and detail as a limited space will permit is the purpose of this article." But where, in the dozen pages which follow, does Professor Merriam show that the plan is excellent and that the great majority of the derivations are correct? There is not another word about the excellence of the plan or the correctness of the great majority of the derivations. On the contrary, our erroneous and misleading treatment of the essential points which should form the initial training of the word-constructor and word-expounder receives our critic's undivided attention — attention lavished upon authors so long past their "initial training" in the use of language that they remember little of, and care less for, any possible verbal quibbles or grammatical quirks—attention that had much better have been bestowed upon such "small minority" of their derivations as may be found incorrect. For when the professional word-expounders have set their own house in order, and have agreed upon what's what, will be time enough for the rest of us to mind what they say.

To illustrate our meaning, and possibly make it clear to our pains-taking and unnecessary critic: His opening charge upon *aurum* and χρυσός being passed over as mere verbality, which will not hold water for a moment as serious criticism—as just about what one should bounce one's little son with if he got out on his *musa, musæ* — we find the Professor formulating our views on the orthography of a certain class of Latin words in this way:

"The terminal vowel of the first component before a consonant should be *i* unless the second component is a participial form; then it should be *o*, because it is the ablative, and we are to say *albocaudatus*," etc.; whereupon follows a neat little disquisition upon connective vowels, to show how foreign to the real genius of the Latin tongue the *o* is; backed up by considerations of the quantity of the termination of the ablative case according to Kühner and the "best German authorities." This sounds formidable; but—bless our philological soul! — we thought everybody knew that before it was thus put in such a masterly manner by our critic, and never thought of evolving any principle in the matter. What we *did* say was, that *atri-*, *albi-*, *magni-* (with the *i*), is undoubtedly a correct form of such compounds, and that we simply put *atro-* in the ablative of instrument conformably with usage in *Picus albolarvatus, Tyrannus aurantio-atro-cristatus;* and we find the Professor, with the help of his 'Harpers'

Latin Dictionary,' adducing about thirty cases in support of our position which he attacks so vigorously. We are delighted to find there are so many cases of the kind; we had no idea there were so many in "genuine Latin," though we could show up many hundreds in fair to middling bird-Latin. We are inclined to plume ourselves on our sagaicty, though it may be simply "through the influence of Greek literature" upon our minds that "the *o* crept into this small corner of" our work. We will hereafter write *atrocristatus* with entire confidence, and cite our critic, if need be, in support of our views; even though, as he appears to be in dead earnest and very serious about it, it is a good deal of Don Quixote and the windmill over again. Let us in our turn say a word to our critic on the general subject of connecting letters in Græco-Latin, for his own information. It is this: that there is no vowel, and possibly no consonant, in the whole alphabet that may not serve that purpose. Once more: if we were not in the best possible humor, we might be inclined to say something sharp on being referred to our Latin grammar to learn that Roby says that one of the "distinctive features of two words being compounded is the possession of but one set of inflections"; and that, as Professor Merriam kindly informs us, "of course at the end of the word, not at the point of junction." We begin to think that our "initial training" was all wrong, after all; for it seems to us we do remember something about our early struggles with *respublica*, *jusjurandum*, *paterfamilias*. Can Professor Merriam be ignorant of the fact that the genitive case of *respublica* is *reipublicæ;* that it is a compound word; that it has two sets of inflections; that one of these is at the point of junction?

Let us try another "summer-day sauntering" with our æstivous critic; if he finds us as amusing as we do him we shall both be amused. Let us saunter on to contractions in general, and contractions of *oou* in particular. The hitch with the Professor appears to be that he misunderstands our use of the word "full form," by which we simply mean all the letters which enter into the composition of a compounded word. Does he suppose us to mean that *leucoourus* can have any existence? We simply say what is perfectly correct, viz., that the composition is *leuco* + *oura;* when in *leucoura*, as often written, we preserve one *o*, and translaterate ου by *u;* and in *leucura*, as often written, we elide the other *o;* leaving a remarkably long *u* to do duty for *oou*. So with *megalonyx;* where we instinctively lengthened the penult—though we confess, upon not so good a principle or precedent as the Professor furnishes to support us.

We can note but a few more points, by which we mean to show how light is the real weight of what looks at first blush to be very heavy criticism. Take *Molothrus*. The upshot of that matter is, that Swainson's word "should stand as he gave it," which is exactly how we left it standing. *Spermophila* we said to be contracted from *Spermatophila;* so it is; and the fact that there are in the Lexicon "more than twice as many" similar contractions has no bearing upon the case in any way. Take *thyroïdes:* respecting which it would be easy to retort upon the Professor, that he would have been right had his first step been correct. Take

*Dendræca:* we said the "full form" would be *Dendræcetes;* so it would be; and the fact that there are more Greek models for a shorter form does not affect our statement in any way.* But before we leave this subject we must express our surprise that Professor Merriam should as a purist and classicist even by implication assent to such a monstrosity as *Dendræca*, or *Dendræcetes* either, considering how "many classicists now insist that we shall write *Mousaios* instead of *Musæus*."

In orthoepy, we find that the Professor catches us in a number of "false quantities," and we feel the ferule on our knuckles. We gracefully concede the point, and with alacrity add the expression of our amazement that there are not more of these dreadful things to be atoned for—considering that we are habitual sinners in this respect in our conversation, with no hope of repentance; and that it was only by the most resolute buckling down to that point that we got so many of our quantities about right. We are likewise pleased to learn that we may return to *Helmitherus* and *pelasgia* on the authority of Aristotle and Æschylus, and may say *plagata* or *plagiata* as we may prefer. We also heartily endorse Professor Merriam's suggestion, more notably Utopian than novel, that future minters of bird-Latin shall say what they mean in coining names, and so save future authors and their critics a deal of trouble and vexation of spirit. That is not a Quixotic idea; it is a dream of Arcadia. But what would then become of reviewers, should philologists and ornithologists prove *Arcades ambo?*

(*c*) We have thus written ourselves into such a blessed good humor, that we hardly have the heart to adduce the real gravamen of our rejoinder. We had two reasons for replying to Professor Merriam. But for these we should have let his remarks go for what they may be worth; for we seldom find it necessary now-a-days to take issue with those critics who honor our productions with their distinguished consideration.

Our contention is, that Professor Merriam's article conveys the impression, to all excepting scholars capable of weighing his remarks with ours, that it is a "sockdolager"; that is to say, that it would make those very persons whom our 'Lexicon' was designed to assist and benefit, believe a pretty nearly worthless work to have been effectually deprived of its pernicious effect by being thus handsomely and conclusively crushed beneath the weight of professorial philological erudition. But in point of fact, nothing of the sort has occurred. Nothing would be easier than for us to tilt, and pretty successfully, against almost every one of the purely philological points which our critic has raised. But where would be the use? The majority of the readers of 'The Auk' would merely dis-

* While we are on words ending in *-æcetes*, let us whisper to our critic that he missed one of the best things that lay in his line. Baird, in 1858, coined three words, which he wrote *Poocætes, Pediocætes, Nephocætes.* Sclater, in 1859, emended the first of these into *Pœcetes*, and we later followed suit with *Pediæcetes* and *Nephæcetes*, on the idea that οἰκετης was concerned. The fact is, these words were formed, like *Ammocætes*, etc., from κοίτη, *Poocætes* (i.e., *Poocætes*) meaning the bird that makes her bed in the grass, etc.

cover that a war of words was going on, and would be bored to death. Does Professor Merriam flatter himself that the clientèle he seeks in 'The Auk' are interested in his nice points? His article is a good article, entirely out of place. It should have been addressed to philologists, through an appropriate medium. Otherwise, before concluding his observations, he should have explained just what bearing his criticisms have; how far he expected to influence ornithological opinion of the general trustworthiness and value of the treatise; what damage he supposed he had done, and how much of the book, if any, he thought might survive the infliction, etc. In fine, why not have given us his opinion of the book on the whole? If it ought to be damned, why not have said so, in language that any one could have understood? No, Professor, you are quite wrong. We have done our share of reviewing for many years, and have learned to apply to the works of others a touchstone which we leave you to discover the art of using. You will, we trust, perceive that touchstone in the paragraphs which have preceded this one, and in those which are to follow.

Our other reason for replying is, that we are anxious to have the benefit of all the sound criticism we can secure, in view of a third edition of the 'Check List.' We wish to be set right wherever we have gone wrong. The praise that our little piece of pioneering has received from mouths of wise censure no more blinds us to its many defects, nay, great defects, than does such criticism as we have met open our eyes to any of its real merit and usefulness. Our annotated copy stands ready to receive and incorporate every correction of a wrong etymology, of a false quantity, of an inelegance even, which may be pointed out; but it is not open to any results of fiddling above the philological bridge — that being quite out of our line, and entirely foreign to the scope and aim of this particular book. We have for some time intended to review our list of names, and make ourselves a good many needed corrections — partly the result of our own studies, partly the fruit of several just and generous criticisms which our work has elicited. As most of our real blunders appear to have escaped Professor Merriam's observation, we beg to call his attention to the following list of words; and, since he has assumed censorship, we have a right to require him to give us the benefit of his learning; with the assurance that it will be kindly received, respectfully considered, and, if found available, be incorporated in the next edition of the 'Check List,' with proper credit to himself. *

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* Should Professor Merriam wish to study bird-Latin further, we can confidently commend to him 'A List of British birds compiled by a committee of the British Ornithologists' Union.' This is what we refer to in following paragraphs as the 'Ibis List,' in which Mr. Henry T. Wharton has done for British Birds what we have attempted to do for American ones. The Index of Gray's 'Hand List' might also furnish him with food for thought, while Sundevall's 'Die Thierarten des Aristoteles,' u. s. w., might be found to contain some valuable reflections.

No. 4. *Iliacus.* Professor Merriam's remarks upon this word are interesting and valuable, especially as they also bear upon No. 141, *trichas.* See also the 'Ibis List,' p. 2. But how does this view bear upon No. 282, *Passerella iliaca?* Merrem, in naming an American Fox Sparrow *iliaca*, certainly could not have intended to call it a Trojan. We said it might be intended to note some resemblance to *Turdus iliacus*, or refer to the conspicuous markings of the flanks (iliac region). Most probably, we may now suppose *iliaca*, as applied to the Fox Sparrow, means simply thrush-like.

No. 33. *Calendula.* We were doubtless right in deriving this word from *caleo*, but wrong in saying that it was "apparently coined by Brisson in 1760"; for the 'Zoologist' reviewer says that it was used in botany centuries ago, quoting Gerard's 'Herball,' 1597: "The marigold is called *Calendula;* it is to be seen in floure in the Calends of almost every moneth."

No. 86. *Motacilla.* We must take definite issue, and agree to disagree, with all those who, upon purely etymological grounds, say that *motacilla* does not mean literally wag-tail. The 'Ibis List' states the case thus: "*Motacilla*, as if *motăcŭla* from **motax*, from *mōto* = I keep moving. Hence not a compound as has been alleged [by ourselves, for example], of a non-existing word **κίλλος** = a tail." This makes *motacilla* mean, of course, a little thing that keeps moving; whereas we insist that it means the bird that wags its tail. No matter what it *ought* to mean, to be etymologically proper; it *does* mean wag-tail, '*quod semper caudam movet*, and is synonymous with **κίλλουρος, σεισοπυγίς**, *siurus*, *hochequeue*, etc. The etymologists, we admit, are perfectly right; but we submit that the ornithologists who make or use the set of words ending in *-cilla* do intend it to mean -tail; and we are glad to learn that "some philologists array a Sanscrit cognate" in favor of this view. *Motacilla* is harder to defend than such words as *ruticilla*, *albicilla*, *atricilla*, *bombycilla*, etc., which do mean, and were meant to mean, red-tail, white-tail, black-tail, and silk-tail. We are ready to surrender our technical etymology (which was simply a groping in the dark after what was needed), but we really have a right to ask Professor Merriam, or Mr. Wharton, to explain *bombycilla*, for example, on any other theory than that it means silk-tail.

No. 169. *Myiadestes.* This unhappy word being up for castigation again, after having caused an international controversy in a number of articles, we are proud to find Professor Merriam with us as to its derivation from **μυῖα** and **ἐσεστής**, which we believe we were the first to insist upon, when combatting the idea that it should be changed to *Myiadectes.* But we cannot agree with him that the proper form should be *Muiedestes.* We should say *Myiedestes*, as the 'Ibis' reviewer has pointed out. Swainson originally wrote *Myadestes*, but he was as great a sinner as an average Frenchman in compounding words. By the way, will Professor Merriam tell us what should be the nominative plural of *Myiadectes?* For we observe that the "Ibis" reviewer has it *Myiadectæ.*

No. 191. *Pyrrhula.* This we called a diminutive of *Pyrrhus* = **πυῤῥός**, fiery-red (**πῦρ**, fire). So it is, *in form;* but, as Professor Merriam says, the

actual derivation is otherwise. In the 'Ibis List' *Pyrrhula* is given by Mr. Wharton as Latinized direct from πυῤῥοιλας, a red bird in Aristotle, from πυῤῥος, and perhaps οὐρά, tail, as some texts read πυῤῥούρας. On this understanding the word is *Pyrrhŭ'la*, not *Pyr'rhŭla*.

No. 192. *Passer*. We have nothing to detract from what we said of this word, but will insert here what the 'Ibis List' gives: "The original form was probably **sparg-ter* (as *sparsus* = **spargtus; rs* then becomes *ss*, cf. *russum* for *rursum*), from the root of σποργίλος = some bird in Aristophanes (*Av.* 300), and of σπαργάω = I swell, meaning 'the wanton bird'; akin to our 'sparrow.'" If Professor Merriam agrees to this, it bears out our idea and suggestion, that the bird was named for its salacity, though we did not know enough about the word to prove it.

No. 209. *Hornemanni*. The 'Zoologist' reviewer supplies the full name: Jens Wilken Hornemann, *1770-†1841. He was the author of a 'Haandbog for Fugleelskere.'

No. 227. *Savana*. The London 'Athenæum' reviewer points out that the actual pronunciation of the Spanish sábana is undoubtedly with the accent on the first syllable. This we did not know; but we correctly accented *sava'na* as the Latinized form of the word.

No. 326. *Oriole*. "Dr. Coues does not seem very clear about the origin of the name oriole, although it has been traced by Littré directly, along with the French form of the same word, *Loriot*, from the Latin *aureolus*, golden." ('Zoologist' reviewer.)

No. 329. *Parisorum*. The 'Ibis' reviewer catches us here at great fault. We might have known that the bird was dedicated to the brothers Paris, and not to the people of the city of that name.

No. 333. *Quiscalus*. We discussed this word at some length, coming to no satisfactory or final conclusion. The London 'Athenæum' reviewer suggests a probable etymon in inquiring, Is there no Mexican Indian word like *quezcal* which could be Latinized into *Quiscalus*? Compare also *quezal* or *quesal*, the native name of the Paradise Trogon.

No. 359. *Perisoreus*. We advanced a purely conjectural derivation of this word, and our guess in this case is wide of the mark. According to Agassiz's 'Nomenclator,' to which the 'Zoologist' reviewer refers us, the word is derived from περισωρεύω, *accumulo*, I heap up all around. "What the application of the name may be we are not sufficiently acquainted with the bird's habits to disclose, but it clearly has to do with the bird's affinity to the magpie, and the well-known tendency to hoarding which that bird has." But we *were* after all on the right scent when we noted σορός (i. e. σωρύς, cf. σωρεύω); and did more than "indulge in a little imagination about it."

No. 416. *Atthis*. The 'Zoologist' reviewer very properly administers a rebuke to the lack of gallantry in forgetting, or omitting to state, that *Atthis* is the name of the beautiful maiden who was the beloved of the poetess Sappho.

No. 462. *Bubo*. In connection with our conjectured relations of this word, see the 'Ibis List,' p. 90. Mr. Wharton concurs with us to compare

**βύας, βύζα, βύζω**, I hoot, etc., from the root of **βοή**, a cry, and cites Byzantium, 'the place of owls.'

No. 491. *Ictinia.* Here is a point on which Professor Merriam might have thrown some light. We gave as probable radication **ἴκτερος**, a disease, in the idea of attacking; *ictus*, a blow, etc. Wharton says (l. c.): Perhaps from the root **ικ**, to strike, as in **ἴξ, ἴψ**, a worm, **ἴπνη**, a woodpecker, *icere*, to strike, etc.; but then adds, more probably from Skt. çjena, a falcon, as if ***ἰ-κjεῖνος**; cf. **ἰκτίς**, a pole-cat, thief.

No. 494. *Accipiter.* Should not Professor Merriam have helped us to decide which of the alternative derivations we gave should be accepted? Wharton gives **ὠκυπέτης**, swift-flying, — thus making it formed on the model of, and synonymous with, **ταχυπέτης**, *Tachypetes.*

No. 498. *Hierofalco, Gyrfalcon.* Why could not Professor Merriam have given us the benefit of his sound erudition on this? We advanced what the 'Zoologist' reviewer calls an ingenious idea, very probably true; but it is against Skeat (whose 'Dictionary' we had not seen when we wrote the 'Check List'). The word seems to trouble the etymologers, and no doubt the ornithologists would be glad to have them settle it among themselves.

(*To be concluded.*)

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# THIRD ADDENDUM TO THE PRELIMINARY LIST OF BIRDS ASCERTAINED TO OCCUR IN THE ADIRONDACK REGION, NORTHEASTERN NEW YORK.*

BY C. HART MERRIAM, M. D.

206. **Turdus aliciæ bicknelli.** BICKNELL'S THRUSH.—In my cabinet is a specimen of this recently described Thrush which I shot in Lewis County, near the western border of the Adirondacks, May 24, 1878. It is a male of the preceding year and its scapulars still show several (four on one side and one on the other) of the light tear-shaped spots so characteristic of immaturity in this group of Thrushes. Following are its measurements:—

No. 1873 (Mus. C. H. M.) ♂ one year old, Lewis County, New York, May 24, 1878. Length, 174 mm. (6.85 in.); extent, 293 mm. (11.53 in.); wing, 92.25 mm. (3.63 in.); tail, 70. mm. (2.75 in.); culmen from feathers, 12.50 mm. (.50 in.); culmen from base, 17 mm. (.66 in.); depth of bill at nostrils, 3.75 mm. (.15 in.); tarsus, 28.50 mm. (1.13 in.).

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* For the original list and first and second addenda, see Bull. Nutt. Ornith. Club, Vol. VI, No. 4, Oct. 1881, pp. 225-235; Vol. VII, No. 2, April 1882, p. 128; Vol. VII, No. 4, Oct. 1882, pp. 256-257.

It will thus be seen that this individual is smaller than the average of the males of Mr. Bicknell's type specimens taken in the Catskills,* and is also smaller than those killed by Mr. Brewster on Mt. Washington.†

207. **Cistothorus stellaris.** SHORT-BILLED MARSH WREN.—Mr. Romeyn B. Hough shot two females of this Wren, October 27, 1877, in the town of New Bremen in Lewis County, and writes me that he is "confident that they breed there every year."

208. **Dendrœca tigrina.** CAPE MAY WARBLER.—Dr. A. K. Fisher informs me that he has seen a specimen of this species that was killed at Lake George, May 27, 1883, by Oliver B. Lockhart. The late Mr. A. Jenings Dayan told me, not long before his death, that he was positive that he had seen a Cape May Warbler in the town of Lyonsdale, in Lewis County, but not having secured the specimen he was unwilling to have the event recorded.

209. **Herodias egretta.** GREAT WHITE HERON.—Dr. A. K. Fisher writes me that "a large white Heron was seen in the marsh at the head of Dunham's Bay, Lake George, Warren County, N.Y., for a period of a week or more in the latter part of May or first of June, 1883. It was seen by a number of residents of the neighborhood, its color rendering it very conspicuous, and was shot at several times at long range without effect."

210. **Sterna fuliginosa.** SOOTY TERN.—Through the courtesy of the Curator of Ornithology, Mr. William Brewster, I have been permitted to examine an immature mounted specimen of the Sooty Tern which is in the Museum of the Boston Society of Natural History. It was secured at Lake Champlain, September 6, 1876, by Jenness Richardson. The bird has not, to my knowledge, been previously taken so far inland; but it must be remembered that the date of its capture (Sept., 1876) is the same as that of the extraordinary influx of this species into New England.‡

211. **Hydrochelidon lariformis.** BLACK TERN.—Mr. Thomas B. Osborne of New Haven, Conn., has recently sent me a skin of a young Tern of this species that he killed at Schroon Lake (in Warren and Essex Counties) on the 18th of August, 1876. Mr. Osborne writes me: "I killed three Terns at Schroon Lake out of a flock of perhaps half a dozen. They were all in the same plumage as the one I send you [which is a young-of-the-year bird]. I have been at Schroon Lake four Augusts but never saw any Terns there, of this or other species, excepting the flock from which these specimens were procured."

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* Ridgway, Proc. U. S. Nat. Mus., Vol. IV, 1882, pp. 377-379.

† Brewster, Bull. Nutt. Ornith. Club, Vol. VIII, Jan. 1883, pp. 12-17.

‡ Merriam's Review Birds Connecticut, 1877, pp. 134-135.

# A STUDY OF THE SINGING OF OUR BIRDS.

BY EUGENE P. BICKNELL.

## INTRODUCTION.*

THE subject of the singing of our birds seems never to have been pursued as a distinct branch of ornithological study. Even in our most complete bird-biographies song is rarely introduced except descriptively or in poetical allusion. But the voices of birds, apart from their intrinsic interest and their associations, are closely related to the times and seasons of the birds themselves and to other phenomena of their lives. And yet, judging from our present ornithological literature, this seems to have been wholly overlooked. We have, indeed, scattered records of individual variation in the songs of birds and of variation in the notes of a few species at different seasons and in different regions, and some well-known examples illustrative of the latter fact, but we have little else. In view of these facts the present paper appears. But while the writer would have it understood that the subject is here considered solely from a local standpoint,† he fully feels that even within these limitations the sum of recorded observations at command is an insufficient basis for an intelligent treatment of many points. The presentation, therefore, of suggestions which the future may develop, while adding something to our present knowledge, is all that can at present be attempted. Let us remember that speculation and theory are not always mischievous or futile. At the threshold of an unstudied subject they have often the effect of stimulating investigation and giving direction to research. No apology is needed for certain somewhat speculative portions of the present paper if any such result is accomplished.

One entering upon the study of the singing of birds must soon recognize as an obvious fact that many birds have two dis-

* Read before the Linnæan Society of New York, February 24, 1883. Published by permission of the Council.

† The observations on which the present contribution is based were conducted in the vicinity of Riverdale on the Hudson, New York City, to which locality all remarks except under contrary statement apply.

tinct seasons of song, separated by a greater or less interval of silence. The first of these song-periods is that of the spring migration and the breeding season; the other a period variable as to time and duration with different species, but which may in general be said to succeed a time of silence which follows the breeding season, with some species continuing through their return migration from their breeding grounds. The greatest variation, however, with respect to its separation from the first song-period, the constancy, the extent and the time of the latter song-period, is exhibited among its exponents, as will be shown beyond.

Some of our summer resident birds cease to sing at the close of or soon after their breeding season, and are silent during the remainder of their stay. Others discontinue song with domestic duties, but resume it before their departure after a longer or shorter period of more or less complete silence. Still others continue uninterruptedly in song during the greater part of their sojourn. This much having been said, it becomes proper to inquire into the causes which produce these results.

Perhaps as a factor in sexual selection we perceive the chief office of song in the avian economy; its main purpose is thus subserved during the mating and breeding season. Thereafter song is not longer a necessity, and the inference would be natural that, after the enervating duties of this period, the vocal organs would be allowed to rest. But disuse of the vocal organs does not result from this cause. It is even true that those species whose family cares are lightest, that rear a single brood only, first become silent; those that bring up two or even three families being least ready to abandon song. Apart from the dominating influence of the breeding season, that which most directly governs the singing-times of birds, and, I may add in passing, their seasonal movements, their breeding seasons and the number of broods reared, is undoubtedly their periodical loss and renewal of plumage.*

* The relation between the moult and the migration of birds is a subject demanding the most careful study. It is indeed surprising that the connection between such obviously related phenomena has not long since been worked out. While it is true that many birds enter upon their migration with the growth of feathers still active in parts of their plumage, it is also undoubtedly true, as a general fact, that the moulting season is a time of inactivity and thus adverse to extended migration. Many birds migrate just before or shortly after the new plumage has completed its growth. Hence

In many cases the moulting periods of our Song-birds correspond more or less closely with periods of silence, voice being resumed with the renewal of plumage. The general statement may therefore be made, that birds are predisposed towards silence during the height of the moult. Though this fact may be by many regarded as one not requiring demonstration, it is by no means without exceptions. In the earlier and later stages of the moult the vigor of birds in general seems little impaired. Not only do many species enter on their migration while yet the moult is in progress or before the complete maturity of their renewed plumage, but birds may be found sitting upon their eggs with evident indications of activity in the growth of feathers. Still we must regard it as a general fact that singing and moulting are in some degree complementary.

But the loss and renewal of plumage in its resulting tendency of interference with the use of the vocal organs may be superseded by a counter influence which at times arises in the special seasonal development of the sexual organs. Thus birds in the spring are sometimes in song before their new plumage has attained its full growth, and it is probable that this is normally the case with many species. But cases of birds in full voice while undergoing their second semi-annual moult, when the sexual functions are inactive, appear to be uncommon, perhaps exceptional, unless the growth of plumage be almost completed.*

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it would seem to follow that the times of migration are in many cases regulated if not determined by the times of the moult. As the times of this process are variable with different species, it seems highly probable that a study of the subject would shed light on the causes of the different times of migration of allied species of birds. It is clear that the periodical mutations of the plumage of birds is involved directly or indirectly with much in their lives that we now but imperfectly understand—with their migrations, their distribution, their breeding habits. And it would not be going too far to claim for the moult a direct bearing on classification, for different species, and in all probability different families and genera, moult in different ways. The subject cannot be followed further here, but it is safe to assume that its careful study would lead to important and unexpected results. It may not be untimely here to suggest that in recording the condition of the moult or renewal of the plumage of birds great care must be exercised to distinguish between the sexes and ages of specimens examined. Often adult and juvenile individuals of a species will at the same time be found to present great differences in the relative maturity of their plumage, and, in less degree, males and females, as well as individuals of the same sex, will be found to differ.

* As bearing upon this topic I learn from Mr. C. F. Holden of New York, the well-known bird-fancier and importer, that while many Canaries become disinclined to sing, or even entirely silent, during the moult, some of the finer breeds sing uninterruptedly during that period.

There are facts which seems to indicate that vocal disability often accompanies the moult, thus imposing silence until power of voice is gradually regained with the renewal of plumage.

In its origin and use, song is undoubtedly to be classed as a sexual character, in the same category as the adornments of the plumage in the male bird. (It is not necessary here to consider the singing of the female of certain species, this being entirely secondary to the present consideration.) Taking this view of the song we can understand why with those species, the males of which undergo great semi-annual mutations in the color of their plumage, — in the fall assuming the plainer garb of the female, — have no second song period: attired like the females, they are, like them, songless. May we construe this fact as evidence that the silence of many birds in the autumn is not voluntary, but that the vocal function is lost with the other attributes of masculinity? It does not necessarily follow that male song birds are always songless when not attired in their nuptial costume. The males of some species while in immature plumage are equally melodious with the adults in full dress. But while I have never been able to study satisfactorily many cases bearing clearly on this point, I have observed in several instances that in apparently immature males which sang, the plumage, though that of the young bird, exceeded in color that of the female of their species. In other cases it seemed probable that sexual maturity had anticipated the phase of most highly developed plumage. The Purple Finch sings while attired in the plumage usually regarded as characteristic of the young male, but I have heard no songs from birds in this condition of plumage which did not show evident immaturity of expression. The female of this species also has been been said to sing. With species the females of which sing, we should expect the young male to have equal use of its voice.

But in these considerations we must not forget that our knowledge of the real significance of color-changes of plumage is but meagre, and that color-phases of plumage are not in all cases true to their usual indications in regard to the age of their subjects. I do not wish to be understood as stating that the males of all of our birds which in the autumn change to the plainer colors of their mates invariably cease to sing. There are at present no data upon which so general a statement can be based, and were the necessary data at hand not improbably exceptions would be

shown to occur. My statement is merely that, as a rule, so far as my own observation has extended, loss of voice in the males of our brilliantly plumaged birds always accompanies loss of other sexual characteristics at the second moult.

It is strictly true with species of such decided change of plumage with the second annual moult as the Scarlet Tanager, the Goldfinch, the Bobolink, and those of our Warblers which undergo material change of plumage.

But many common birds, which show no evident change of plumage with the second moult, have no second song-period. In discussing this class we must remember that it is not always a simple matter to ascertain whether a bird belongs more properly with those species which experience insignificant seasonal changes of plumage or with the reverse class. Among species of obscure plumage it is difficult to decide what constitutes a decided change. We can conceive how slight changes in certain groups of birds may be equivalent to much greater variation in other groups; but the relative value of the changes which we may observe is unknown to us. But in that class of singing birds we are now considering,—that class in which the males, without assuming the plainer garb of their mates, yet become silent after the breeding season,—the periods of silence and song of all, perhaps, may be accounted for. Let us first discuss summer resident species. Some of these which have no second song-period with us are our earliest departing migrants. Obviously among these there is no opportunity to observe a second song-period in their summer home, even if such takes place.

Another class of summer residents continue uninterruptedly in song during the greater part of their stay, thus appearing to have no second song-period. But there is little doubt that a period of silence is passed by each individual of such species. For though among its members as a body there may be no actual interruption of singing from spring to fall, a time of minimum vocal vigor seems always to follow the breeding season and to be partially recovered from at a later period. In the case of the species taken as a whole the silent period is obscured by the variation in the singing time of individuals. In other words, there is a sufficient difference in the time of the beginning and cessation of song among the component individuals to bridge with isolated songs the true silent period of the species. Hence the almost con-

tinuous singing through the summer of the Red-eyed Vireo, the Song Sparrow, the Baltimore Oriole, the Phœbe Bird, and the Great-crested Flycatcher. In all of these, perhaps, the silent period actually occurs with the species as a whole in certain years when conditions uncongenial to song prevail, but the records of several seasons taken collectively disguise any such break in the singing times which may have occurred.

We must now consider these species which, without exhibiting any marked seasonal change of plumage, are yet silent during a more or less protracted stay after the close of the first song-period.

Let us first take up some matters preliminary to the consideration of this class.

It is probable that extreme fatness engenders a constitutional predisposition towards silence. The majority of birds arriving on the spring migration possess little or no obvious adipose tissue. I have likewise found this to be the case with birds that are in full song in midsummer. If we examine a large number of spring birds some exceptions will be found, though there will be comparatively few, and very few that can be considered extreme exceptions. In the fall, however, the contrary will be found to be the case. At this season the majority of birds are more or less fat and many excessively so, fat often beginning to accumulate before the completion of the moult. If, then, excessive fatness tends to induce silence, we have in this fact a reason for the absence of a second song-period with many species: singing is first checked by the moult, and the adipose condition directly succeeding suppresses all inclination to resume it. In many birds which remain with us long after the second moult, without decided change of plumage, yet with no second period of song, we find illustrations of this sequence of physiological conditions.

A striking instance, afforded by the Red-eyed Vireo, may be cited. This Vireo is one of our most persistent songsters, and forms one of the exceptions to the rule that birds are not generally in song when the moult is in active progress. It is in full moult in August, in which month a silent period, although indicated, is obscured by individual variation in the time of discontinuance and resumption of song. In the month of August this species may be found in an active stage of moult. Though its vocal vigor is at low ebb during this time, especially in sultry sea-

sons, song is not discontinued until the moult is completed and fat has begun to develop. This species thus illustrates decadence of vocal vigor during activity of the moult, and complete cessation of song with the adipose condition supervening. Other similar evidence could also be adduced.

But I do not forget that our evidence is fragmentary and uncertain. Whether disuse of the vocal organs directly results from the physical condition with which we find it associated, or from some collateral cause, we are ignorant. But it is certainly easy to understand how excessive fatness might result in reduced emotional sensibility or indisposition to vocal effort, or how a development of adipose tissue about the vocal organs might interfere with their free action. Bird-fanciers recognize the injurious effect of over-feeding on the vocal power of cage birds.

Song, as an immediate result, appears to be the outcome of emotion or excitement, and reaches its highest expression, with its highest use, during the mental and physical excitement of the breeding season. Every one who has been an observer of birds must believe them to possess high cerebral sensibility. The influence of almost impalpable meteorological changes on the singing of birds cannot fail to have been remarked, and the effect of decided weather changes must often have been apparent even to the most unobservant. While with many species the habit of supplementary song, if I may so term the habit of singing in the autumn, is firmly established, with others it is inconstant and greatly dependent on favorable conditions of weather. The supplementary song-period is thus often of uncertain duration, and it even happens with certain species that it is confined to a few days, or, as it sometimes appears, even to one.

Instances of the effect of mental excitement on the singing of birds are constantly before us. Birds suddenly disturbed or startled from their retreats, or abruptly ceasing from a headlong chase after or flight from a companion, often break forth with sudden song, sometimes even at a time when the species is ordinarily silent. So, too, the excited repetition of an alarm note not infrequently leads up to a sudden burst of song.

This brings us to the consideration of a habit possessed by some of our birds of singing while on the wing. With some species singing during flight is but an ordinary occurrence, as in the case of the Bobolink, which continually overflows with melody during

its gambols in the May meadows; or the Orchard Oriole, which passes with uninterrupted song from tree to tree. With others the indulgence of the habit is less matter-of-fact, and singing on the wing is the accompaniment only of special flights. But the habit reaches a still greater specialization. Among those species with which it is confined to the season of courtship it is variously exhibited as a general habit, as a special habit, and again as a reserve habit apparently set apart for particular and infrequent indulgence. As an instance of a species with which the habit is a general one, the Yellow-breasted Chat may be cited. Where these birds abound their ridiculous acrobatic song-flights may be daily witnessed. With the Purple Finch, though the habit may also be regarded as a general one, it is much less frequent. In the Golden-crowned Thrush we discover a great specialization of the song-flight, the vocalization accompanying the flight being of a high order and utterly different from the ordinary song of the species. Nor it is commonly to be heard, for either the ability to produce it is confined to favored individuals, or it is only indulged on special occasions, or under an extreme degree of mental excitement. The cause of these song-flights, and of the extravagant demeanor with which they are conducted by some species, can be attributed only to some unusual state of mental excitement, which wields an irresistible power over its subject.

Compared with ordinary vocalization, singing under these circumstances seems to represent a higher vocal effort, as it certainly does a higher vocal accomplishment. Hence it is not suprising that these unusual demonstrations should occur under the intense sexual excitement of the breeding season, but why with some species they should be continued into the autumn, or even be deferred until the breeding season is passed, seems inexplicable. Yet with a number of our birds this is the case. So far as my own observation has extended, it is true of all those species with which aerial song-flight appears to be only occasional or exceptional. And thus in several cases where I have observed but a single instance of song-flight in a species, my record of the performance dates in the fall. The Indigo Bird and the Swamp Sparrow may be cited as examples. The Maryland Yellow-throat is a species with which aerial song-flight is not an uncommon habit, but appears never to belong to the early spring. Not until the summer,

when we may suppose the emotions of the nuptial season to have waned, may we commonly witness the song-flights of this species and hear the accompanying volubility of utterance so different from the usual song.

In many cases some particular bodily motion or set of motions accompanies the effort of song. It may not be irrelevant here to query whether this combined vocal and bodily activity, so often observable, is to be regarded as resulting from an intensity of emotion which fails to find satisfactory relief through a single source of expression, or whether song be ever from physiological necessity dependent on muscular action additional to the activity of the vocal organs. We often observe during a song-flight a tendency to greater bodily action than is required for simple flight. Indeed, I have seen such motions so marked in the case of the Orchard Oriole as strongly to suggest the Chat. The same may be said of the Maryland Yellow-throat. But undoubtedly the effort of singing on the wing, by disturbing the natural motion of flight and retarding the progress of the bird through the air, has much to do with the unusual demeanor of most species during the song-flight. The song-flight certainly argues some forcible mental process in the actor. That birds are subject to sudden and intense subjective motions, we cannot doubt.

Articulate or vocal variation in birds may be of five principal kinds. These may be designated as geographical, seasonal, individual, variation with age, and abnormal. As the present paper is intended to treat primarily of the times and seasons of song, each of these kinds of variation will be only briefly touched upon here as connected with and partially introductory to the general subject.

Of *Geographical variation* little can be said. Up to the present time it has hardly been formally recognized as in any way general, and though well illustrated in the case of certain birds, our knowledge of it is slight. It is, however, probably more general than has been supposed, and it is not by any means improbable that ultimately it may be found susceptible of formulation in special laws, as physical variation has been.

Perhaps the best exponents of vocal variation with longitude are our forms of *Sturnella*. While there appears to be no such conspicuous instance of vocal variation with latitude, such variation has been observed and recorded in the case of a few species.

In the passage of certain species on their spring migration, there sometimes appears to be a difference observable between the songs of the earlier and later comers. As the first comers of many birds undoubtedly represent the more northerly breeding individuals of their species, the fact above cited may be of significance in the question of geographical variation in song.

*Seasonal variation in song.*—In several species there is a difference, more or less decided, between the song of the breeding season and that of the later song-period. How far this may result from actual change of song with adults from spring to fall, or how far from the efforts of juvenile birds in the later season is uncertain. Certain it is, however, that the adults of some species show a variation in song from one season to another. This variation is not always that which would naturally result from a reduced vocal impulse, which we might expect to follow the breeding season, and to forerun decedent song. While in some species variation in song from spring to fall is doubtless to be attributed to this cause, with others the song of the later season is of equal tone with that of the earlier, and may even be more prolonged and much more varied, if not of greater power. These facts will be illustrated beyond.

*Vocal variation with age.*—Of this class of variation I have little to say, having never myself observed an unequivocal case of the singing of a wild bird of the year. We find the young male of the Orchard Oriole in full voice in its second year while yet showing in its plumage plain evidence of its immaturity. In seeming contrast to this instance of the song of the adult being attained before the adult plumage, I have found the male Purple Finch in the spring in the brown plumage of the female with a song decidedly inferior to and otherwise different from that of the mature bird. As an instance of the singing of the young of one of our native birds I may cite the fact of the young of the Mocking Bird singing at the age of a few months while yet in the speckled plumage. Mr. C. F. Holden assures me that this is the case, at least when the species is kept in confinement. Mr. Holden also tells me that the song of the young differs from that of the adult much in the same manner that the voice of a child differs from that of a grown person. In the summer the Redstart seems to possess two types of song differing in tone and accent, and observation goes to show that the more feeble performances are those of immature birds.

Occasionally singularly aberrant songs are heard from the common Robin, in which the mellow rolling quality is entirely lost. The notes are abrupt and separated, often with distinct rests, and sometimes terminate with a vibratory sound suggestive of the vibrant quality characteristic of the songs of our Wood Thrushes. I have not been able to ascertain if these sounds regularly proceeded from immature throats, but if this be the fact it probably affords an instance of an ancestral character of voice retained by the immature progeny of descendants.

*Individual vocal variation.*— Undoubtedly it can be said that in song, as in plumage, no two birds are precisely alike. But the extreme difficulty, or often impossibility, of comparing the songs of birds except through an untrustworthy mental agent, is a serious obstacle in the study of this branch of the subject. Nevertheless the statement that the songs of birds of the same species are subject to extreme variation, and that probably no two songs of different individuals of a species are identical, can be accepted with little or no violence to the truth. With the members of some species phonetic variation is especially evident. At the season when the Song Sparrow is in full voice, I can never walk with attention directed to the songs of these birds along the way without being forcibly struck with the marked variation shown in movement, tone, accent and other qualities either separately or in conjunction. The same thing is conspicuously true of many birds, as the Robin, the Field Sparrow, the Rose-breasted Grosbeak, and others which occur in sufficient numbers to afford ample scope for observation. But even the same individual will show considerable variation in its song at different times; indeed not a few of our birds possess two or more distinct songs.

We are slow to give birds credit for the capacity of vocal expression which many of them possess. Writing now in the autumn, with no opportunity for refreshing my memory, I can recall over half a dozen distinct utterances of the common Robin, and as many of the Song Sparrow. It is probable that they have many more, and that birds possess a greater power of oral communication than we ever suspect.

*Abnormal vocal variation.*— This kind of variation, probably caused by imperfections of development or injuries either of the vocal apparatus or adjacent structures, is perhaps not always

clearly definable from the preceding. Very extreme cases of individual variation will probably fall under this head. With the Song Sparrow I have observed several instances of abnormal variation in song, in one case the song being strikingly like that of the little Field Sparrow.

A case of abnormal variation in song of another species, the Red-shouldered Blackbird, may be here instanced. The song of this species is a characteristic and usually very constant one, especially when we take into consideration the number of birds that are commonly found singing together. Their song is thus written by Nuttall: "*Kong-quer-ree.*" I have, however, heard the first note doubled, and in one case it was the only note heard, the remainder of the song being either so faintly uttered as to be inaudible or entirely omitted. The low guttural quality of the single note, and its measured repetition, gave it a noticeably corvine character.

In treating of the songs of birds we must not confine ourselves too narrowly to the class Oscines or true Singing Birds. Birds of lower grade, which are denied the power of true song, are usually endowed with a capability of producing either orally, through physical action or mechanically, sounds as characteristic as the songs of their more gifted relations. Thus the hooting of the Owl, the drumming of the Grouse, the hammering of the Woodpecker, must be regarded as the equivalents of song.

(*To be continued.*)

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## BIRD MIGRATION.

At the first congress of the American Ornithologists' Union, held in New York City, September 26–28, 1883, a Committee on the Migration of Birds was appointed. It is the purpose of this Committee to investigate in all its bearings, and to the fullest extent possible, the subject of the migration of birds in the United States and British North America. The work will not be limited to the accumulation of records of the times of arrival and departure of the different species, but will embrace the collection of all data that may aid in determining the causes which influence the progress of migration from season to season. For example, severe storms, gales of wind, protracted periods of

unusually high or low temperature (for the locality and time of the year) are among the atmospheric conditions that are known to exert marked effects upon the movements of birds. The opening of the leaves and the flowering of certain plants, with the correlative appearance of a multitude of insects, are also among the factors that have to do with the abundance of many species. Hence the careful registration of certain meteorological phenomena, and of the state of advancing vegetation from day to day, will constitute prominent items in the record books of the observer.

For the purpose of rendering the result of the season's work as full and valuable as possible, the Committee earnestly solicits the co-operation of every ornithologist, field-collector, sportsman, and observer of nature in North America. Indeed, a large corps of observers is absolutely essential to the success of the undertaking, and the Committee hopes to receive substantial aid from many who profess no knowledge of ornithology. Efficient service can be rendered by those familiar with only our commonest birds, and the Committee will gladly accept data concerning any of the following well-known species:—

Robin.
Mockingbird.
Catbird.
Brown Thrasher.
Bluebird.
House Wren.
Yellow-rumped Warbler; Myrtlebird.
Yellow-breasted Chat.
Redstart.
Maryland Yellow-throat.
Cedarbird; Waxwing.
Purple Martin.
Barn Swallow (fork-tailed).
Violet-green Swallow.
Scarlet Tanager.
Pine Grosbeak; Bullfinch.
Purple Finch.
Red-poll Linnet.
Yellowbird; Thistlebird.
Snow Bunting.
Eastern Chewink; Towhee.
Junco; Slate-colored Snowbird.
Cardinal Redbird.
Rose-breasted Grosbeak.
Indigo-bird.
Bobolink; Ricebird.
Cowbird.
Yellow-headed Blackbird.
Red-shouldered Blackbird.
Meadow Lark.
Oriole.
Crow Blackbird.
Horned Lark; Shore Lark.
Kingbird; Bee Martin.
Pewee; Phœbe.
Eastern Hummingbird.
Eastern Chimney Swift.
Whippoorwill.*
Nighthawk.†
Kingfisher.
Fish Hawk.
Wild Pigeon.

Also any of the Waders, "Shore-birds," and Ducks.

* When first heard. † When first seen.

## Plan of the Work.

For convenience in collecting and arranging the enormous mass of material which will be accumulated by the joint labors of this army of field workers, it has been deemed advisable to divide the vast expanse of territory embraced in the United States and British North America into thirteen Districts, each of which will be placed under the immediate direction of a competent Superintendent. The Districts, with their respective Superintendents, are:—

Alaska, Supt., John Murdoch, Smithsonian Inst., Washington, D. C.

North-west Territories, Supt., Ernest E. T. Seton, Assinaboia, *vid* Carberry, Manitoba.

Newfoundland, Supt., James P. Howley, St. John's, Newfoundland.

British Columbia, Supt., (not yet determined).

Manitoba, Supt., Prof. W. W. Cooke, Caddo, Indian Territory.

Canada, Supt., Montague Chamberlain, St. John, New Brunswick.

Atlantic Seaboard (Lighthouses and Lightships from Canada to the Gulf of Mexico), Supt., (not yet determined).

New England, Supt., John H. Sage, Portland, Conn.

Atlantic District (New York, Pennsylvania, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina), Supt., Dr. A. K. Fisher, Sing Sing, New York.

Middle-eastern District (Southern Michigan, Indiana, Ohio, West Virginia, Kentucky and Tennessee east of the Tennessee River, Alabama, Georgia, Florida), Supt., Dr. J. M. Wheaton, Columbus, Ohio.

Mississippi Valley (Dakota, Minnesota, Wisconsin, Nebraska, Iowa, Illinois, Kansas, Missouri, Indian Territory, Arkansas, the small portions of Kentucky and Tennessee west of the Tennessee River, Texas, Louisiana, Mississippi), Supt., Prof. W. W. Cooke, Caddo, Indian Territory.

Rocky Mountain District (Idaho, Montana, Wyoming, Utah, Colorado, Arizona, New Mexico), Supt., Dr. Edgar A. Mearns.

Pacific District (Washington, Oregon, California, Nevada), Supt., L. Belding, Stockton, California.

The home of each observer is called a Station, and is recorded by number upon the books of the Committee. The Committee particularly requests that all persons who read this circular, and are willing to aid in the work, will *immediately* communicate with the Superintendents of their respective Districts. Those residing in Districts whose Superintendents have not as yet been named may address the Chairman.

It is the duty of each Superintendent to exert himself to the utmost to increase the number of observers in his District: to answer the questions they may put to him concerning the details

of the work, etc.; to collect at frequent intervals the product of their labors; to ascertain from these data the whereabouts of certain species in winter, and the times of leaving their winter homes; to determine if possible the number and extent of the chief avenues of migration within the limits of his District, and the average rate of speed at which the different species travel; to locate the *breeding areas* of the summer residents; and, finally, to submit the result of the season's work to the Chairman of the Committee. The Chairman shall, in turn, arrange, condense, and systematize the material received from the Superintendents of the several Districts, and shall present to the Union the fruits of the joint labors of all the collaborators, together with any comments, deductions or generalizations he may have made upon the same.

### Instructions to Collaborators.

The data collected may conveniently be arranged in three general classes: *a*. Ornithological Phenomena. *b*. Meteorological Phenomena. *c*. Contemporary and Correlative Phenomena.

#### (*a*) *Ornithological Phenomena.*

Each observer is requested to prepare, at his earliest convenience, a complete list of the birds known to occur in the vicinity of his Station, and to indicate (by the abbreviations enclosed in parentheses) to which of the following five categories each species pertains:—

1. *Permanent Residents*, or those that are found regularly throughout the entire year (R).

2. *Winter Visitants*, or those that occur only during the winter season, passing north in the spring (WV).

3. *Transient Visitants*, or those that occur only during the migrations, in spring and fall (TV).

4. *Summer Residents*, or those that are known to breed, but which depart southward before winter (SR).

5. *Accidental Visitants*, or stragglers from remote districts (AV).

It is desirable also to indicate the relative abundance of the different species, the terms to be employed for this purpose being: *Abundant*, *Common*, *Tolerably Common*, *Rare*.

In many species the males arrive in advance of the females, hence it is important to note the sex of the first comers, and the date at which the opposite sex is first seen.

In recording arrivals and departures it is highly important to distinguish between the movements of the great bulk of the species and those of the forerunners or advance guard. For this purpose two dates should be recorded for the incoming, and two for the outgoing of every non-resident species, as follows:—

1. The first appearance of the species (F).
2. The arrival of the bulk (BA).
3. The departure of the bulk (BD).
4. The last individual seen (L).

In addition to the above, which may be regarded as *essential data*, there are many other noteworthy details that bear more or less directly upon the complicated problems involved in the study of migration. Among such may be mentioned the bodily condition of the bird (whether fat or lean), the moult, and the periods of song. The time of mating, when observed, should always be recorded.

### (*b*) *Meteorological Phenomena.*

Extended meteorological data are not required, though the observer would derive material assistance from a systematic weather record. The Committee desires information upon:—

1. The direction and force of the wind.
2. The direction, character and duration of storms.
3. The general conditions of the atmosphere, including rainfall.
4. The succession of marked warm and cold waves, including a record of all sudden changes of temperature.

### (*c*) *Contemporary and Correlative Phenomena.*

The Committee desires that the data under this head be as full and complete as possible, and requests exact information upon:

1. The date at which the first toad is seen.
2. The date at which the first frog is heard.
3. The date at which the first tree-toad or "peeper" is heard.
4. The dates at which certain mammals and reptiles enter upon and emerge from the state of hibernation.

5. The dates at which various insects are first seen.

6. The dates of the flowering of various plants.

7. The dates of the leafing and falling of the leaves of various trees and shrubs.

8. The dates of the breaking up and disappearance of the ice in rivers and lakes in spring, and of the freezing over of the same in the fall.

C. Hart Merriam,
*Chairman of Committee on Migration,*
*Locust Grove, Lewis County,*
*New York.*

## RECENT LITERATURE.

**Nelson's Birds of Bering Sea and the Arctic Ocean.***—The late Mr. G. R. Gray, who had a habit of literal exactitude in handling the names of birds, might have reaped a fine crop of new generic and specific terms from this treatise, in which many of the scientific designations are misprinted in bold-faced type, not all of these being accounted for in the list of errata which constitutes page 56 *e*. It is easy to see that a page of matter relating to the Spoon-billed Sandpiper divorces two species of *Actodromas* from the other two treated; but by the erratum leaf alone can we discover that the matter headed *Arquatella maritima* relates to a bird "lately described by Mr. Ridgway";

* Contained in: Cruise | of the | Revenue-steamer | Corwin | in | Alaska and the N. W. Arctic Ocean | in | 1881. | — | Notes and Memoranda: Medical and Anthropological; | Botanical; Ornithological. | — | Washington: | Government Printing Office. | 1883. 1 vol. 4to, pp. 1—56, 56 *a—f*, 57—120, with 12 pll. not numbered and some not lettered, and various woodcc. in text. The ornithological matter is half-titled | — | Birds of Bering Sea and the Arctic Ocean. | By | E. W. Nelson. | — | 55 | It occupies pp. 55, 56, 56*a—f*, 57—118, with 4 colored plates.

In mechanical execution this piece of book-making is a miraculous botch. One familiar with the possibilities of political printing has still something to learn from inspection of this realization. In the copy examined, for example, the title-page is upside down, and makes the fifth leaf of the book, preceded by a bastard title-page and two pages of text, likewise upside down, and faced by a plate of a fish which belongs to an ichthyological article at the end of the book—though no hint of ichthyology is given in the statement of 'Notes and memoranda' which the title duly sets forth, while the broken pagination and the entirely unnumbered and partly unlettered plates prepare us for the typographical eccentricities above noted.

i. e., to *A. conesi*. And so on. It is a pity that so valuable and interesting a treatise as this of Mr. Nelson's should not have been more carefully printed.

The author accompanied the 'Corwin' on her cruise in search of the 'Jeannette' during the latter part of the summer of 1881. We quote:—

"On June 21, we left Saint Michaels and crossed Bering Sea to Saint Lawrence Island and Plover Bay on the Siberian coast; thence along the coast and through the Straits and northwest in the Arctic to the vicinity of Nordenskiöld's winter quarters....Thence we returned again to Saint Lawrence Island and to Saint Michaels. After remaining here a short time, we returned to the Arctic, touching at all the islands in Bering Straits; and during the remainder of the summer visited in succession the entire Alaskan coast-line from Bering Straits to Point Barrow, including Kotzebue Sound, and on the Siberian shore from the Straits to North Cape. We also cruised along the edge of the ice-pack, landing upon Herald and Wrangel Islands. On Sept. 14, we passed through Bering Straits bound south; and after remaining sometime at Ounalaska in the Aleutian Islands,.... we left, October 4, homeward bound.

"The observations upon which the present paper is based were made both during the cruise just detailed, and in addition are the results of observations made by myself during over four years' residence at Saint Michaels, and explorations carried on in various directions from that point. In addition, I have used information obtained from various reports which have been issued regarding the region in question....

"The species given for the Alaska coast and the islands of Bering Sea are almost, or quite, a complete list of the birds found there; but the species mentioned upon the Siberian coast form only a small quota of those occurring in that region."

After some pages concisely descriptive of the region and its avifauna, the author proceeds to treat, in more or less detail, no fewer than 192 species of birds, North American with few exceptions. The interesting notes are chiefly those of a field naturalist, the technicalities of the subject being at a minimum. The determination of the species, we presume, and the terminology employed, rest upon excellent authority.

The nearness of America to Asia in this latitude, the narrowness between meridians in Arctic regions, and the homogeneousness of circumpolar faunæ, all tend to blend the birds of the two continents. Forty miles of Arctic ocean is nothing in the distribution of birds, and in fact two faunæ inosculate here. This seems to be brought about in two ways, one of which is the actual interchange of types of birds characteristic of the 'Old' and 'New World' respectively. As our knowledge of the bird fauna of North Alaska has matured, we have lengthened our North American list of such types; and quite possibly, when the Siberian fauna is as well known, an Asiatic list may be the gainer by sundry acquisitions from our side. Among the Old World forms found in Alaska we may mention the following: *Phylloscopus borealis*, *Parus cinctus*, *Budytes flavus*, *Anthus pratensis*, *Motacilla ocularis*, *Pyrrhula cassini*. All of these

oscine Passeres are treated by Mr. Nelson, excepting the last one. The *Parus* is rated as the var. *grisescens* of Sharp and Dresser, said to be "the much grayer and somewhat larger Eastern Siberian form," occurring in Alaska. If this determination holds, "*Parus cinctus*" of the American list becomes *P. cinctus grisescens.** The *Motacilla ocularis*, well known from Plover Bay, Siberia, and lately found in California, is stated to have been observed by Mr. L. M. Turner in the spring of 1881 on Atkha, the western-most island of the Aleutian chain. The Asiatic *Lanius cristatus*, though not yet to be added to our fauna, comes near it, a specimen having been found at Wrangel Island. The Asiatic *Sylvia eversmanni* is in similar case, having been found by Mr. Nelson northeast of the Straits.

Among water birds, as might be expected, Alaska has thus far yielded a number of Old World forms. The Asiatic Golden Plover, *Charadrius fulvus* of authors, was recorded some years ago. Mr. Nelson now speaks of the Mongolian Plover, *Ægialites mongolicus*, saying that "there is a single record of this bird's occurrence in Alaska." "Two specimens were procured on Choris Peninsula, in Kotzebue sound, during the summer of 1849."† This bird has thus far escaped inclusion in the North American lists. The Sharp-tailed Sandpiper, *Actodromas acuminata*, an Asiatic species, is an interesting addition to our Fauna lately made by Mr. Nelson at Saint Michael's, Alaska, where it is said to be "abundant" during the autumn. Decidedly the most interesting of this group, the Spoon-billed Sandpiper, *Eurynorhynchus pygmæus*, though only obtained by Mr. Nelson on the Siberian side, is now to be added unquestionably to the American list.‡ Of this extremely rare and curious bird, of which perhaps only about 30, mostly Indian, specimens are known to exist, Mr Nelson was so fortunate as to secure a fine adult female, in breeding dress (June 26), making the second known in this plumage — that figured in the 'Ibis,' as below cited, having remained until now unique. As Mr. Harting has surmised, the breeding place of the species has proven to be the northeast Arctic shore of Asia, whence it is but a step to reach the opposite continent. Mr. Nelson gives a full description of the plumages, and also figures his beautiful specimen. Such other Asiatic species as the Pacific

* We have long had stereotyped in the plates of the new edition of the 'Key', under name of *Parus hudsonicus evura*, an Alaskan Tit, apparently before undescribed, resembling *P. hudsonicus*, but larger, with longer tail (nearly 3.00 inches) and apparently bearing the same relation to *hudsonicus* proper that *P. septentrionalis* does to *P. atricapillus*.

† See Harting, Ibis, 1870, p. 386; P. Z. S., 1871, p. 111.

‡ It is recorded by Harting, P. Z. S., 1871, pp. 111, 114, from Choris Peninsula, the specimen said to have been procured there in 1849, and figured in the Ibis, 1869, p. 426, Pl. XII, being supposed to be the only one known to exist in summer plumage. The species was lately noted by Ridgway as occurring at Point Barrow, in Bull. U. S. Nat. Mus., No. 21, 1881, p. 85. Without reference to the earlier record here cited, we lately included it in our Check List, 1882, p. 136, with some hesitation, as we understood that the alleged Point Barrow occurrence was open to question. There seems, however, no reason to doubt the actual occurrence of the species on the American side, and it should take proper place now as a 'North American' bird.

Godwit, *Limosa uropygialis* of Gould, or *L. lapponica novæ-zealandiæ*, as Mr. Nelson gives it; the Wandering Tattler, *Heteroscelus incanus*; the Bristle-bellied Curlew, *Numenius taitiensis* (*N. femoralis* Peale), complete the list of Waders already known to reach our shores and included by Mr. Nelson in the present connection.

The other of the two methods, above alluded to, by which the Asiatic and the American faunæ come together is a curious one, if it can be fully substantiated. Though, as is well known, the *Eastern* North American fauna reaches the Pacific in the latitudes of Alaska, yet there seems to be in that region an approach of some American forms to the characters of their Asiatic or European conspecies. Perhaps the case could be more rigorously defined as the tendency to a single *circumpolar* type of conspecies which further south become better differentiated in any meridian; and very likely some forms now quoted as peculiarly Alaskan, in so far as North America is concerned, may prove characteristic rather of our whole Arctic coast. The case seems to be best marked among Birds of Prey. According to what we presume to be Mr. Ridgway's indentifications, Mr. Nelson's article gives us, for example, as Alaskan, *Ulula cinerea* and *Ulula cinerea lapponica; Nyctale tengmalmi* and *Nyctale tengmalmi richardsoni; Surnia funerea* and *Surnia funerea ulula; Hierofalco gyrfalco candicans* and *Hierofalco gyrfalco sacer;* with two forms of Peregrines, *Falco peregrinus nævius*, and *F. peregrinus pealii*. Waiving what might be said against the distinctness of any or all of these related forms, and assuming subspecific characters to be established, have we in such cases as those of the three Owls the Old World forms actually reaching us from Asia? Or rather, have we not the American forms merging toward the pole into the common stock or stem of the species?

Excepting the three Owls mentioned, all the Alaskan Birds of Prey are noted by Mr. Nelson under the recognized names of supposed American forms, as *Pandion haliaëtus* "*carolinensis*"; *Archibuteo lagopus sanctijohannis; Aquila chrysaëtus* "*canadensis*," etc. A *Bubo virginianus* "*subarcticus*" is given among the Owls which occasionally visit the coast of Bering Sea.

The case of the Ptarmigan, as presented by Mr. Nelson, can be understood only by reference to the erratum leaf. One is *Lagopus albus*. Two others (Nos. 78 and 79) are to be treated as one, both being headed "*Lagopus rupestris*, Rock Ptarmigan." Thirdly comes No. 80, a certain "*Lagopus rupestris occidentalis*, Turner, Atkhan Ptarmigan." This is the same bird as that recently published by Mr. L. M. Turner (Proc. U. S. Nat. Mus., 1883, p. —), under the name of *Lagopus mutus atkhensis*, from Atkha Island, and the name *Lagopus rupestris occidentalis* is corrected among the errata. Mr. Turner's later determination is to call the new Ptarmigan *Lagopus mutus atkhensis*. We may add, however, that we have ourselves no faith whatever in the validity of the distinctions sought to be established by Mr. Turner among the Ptarmigans of the *mutus* or *rupestris* type, and we base this view in the main upon Mr. Turner's own statement of the case. He may be quite right, however,

in reducing the North American *L. rupestris* to a subspecies of *L. mutus*. Mr. Nelson's fourth Ptarmigan is headed "*Lagopus alpinus*, Subalpine Ptarmigan," and is only reported as from Siberia, and upon Nordenskiöld's authority.

The Alaska Crane, noted as *Grus fraterculus* Cassin, is said to be extremely common on the coast of Norton Sound.

The Geese of the Canada Goose type are given as two, *Bernicla canadensis leucoparia* of Cassin, the smaller species, and *B. canadensis occidentalis* of Baird, a larger one from the west coast, noted by Baird in 1858, but overlooked for some years. We are inclined to endorse these determinations, some late examinations of our Geese having led us to believe that there are four recognizable though doubtless intergrading Geese of North America of the *canadensis* type — two larger and two smaller subspecies. The large *B. canadensis* proper has its western representative in *B. c. occidentalis*, as the small *B. c. hutchinsi* has its in *B. c. leucoparia*.* The "strange and handsome" Emperor Goose (*Philacte canagica*) is given as occurring "in thousands" from the Yukon to Cape Vancouver. The European Widgeon (*Mareca penelope*), is given upon H. W. Elliott's record; the American also occurs. Steller's Eider (*Polysticta stelleri*) is noted as widely distributed over the coasts of Bering Sea, and as "extremely numerous" along the Aleutian chain in winter. *Lampronetta fischeri*, the Spectacled Eider, is said to be common and in some places abundant along the Alaskan shore of Bering Sea as far north as Norton Sound. Other Eiders and three Scoters also occur; the Velvet Scoter is given as *Melanetta fusca*.

Among the northern Gulls, the Ivory Gull, *Pagophila eburnea*, seems to be absent from Bering Sea, though reported by Nordenskiöld from Northeast Siberia. The Kittiwakes are *Rissa brevirostris*, and *R. tridactyla kotzebuii*. There is in this group the same typographical or other confusion noted for "*Lagopus rupestris*"; for two Gulls, according to the errata to be treated as one, are separately headed "*Larus cachinnans*" Pall. One (No. 152) is, however, Englished as the "Siberian Herring Gull," the other (No. 153) as "Pallas's Herring Gull"; while, to add to the confusion, another species (No. 151) is also called "Siberian Gull," but headed *Larus affinis* Reinh. *L. affinis* is said to be "numerous" at Plover Bay and elsewhere.

The rare and beautiful *Rhodostethia rosea* was taken in October, at Saint Michael's—a young of the year. Mention is also made of Nordenskiöld's Siberian adult of July 1, 1879, and the eight specimens procured by Mr. R. L. Newcomb, Naturalist of the 'Jeannette,' only three of which reached the Smithsonian, with Mr. Nelson's one making the only four specimens at present known to exist in any American collections.

Among the Petrels, the Slender-billed Fulmar, *Priocella tenuirostris* (Aud.) Ridg. (the *Thalassoica glacialoides* of some), is noted as Alaskan on the strength of Dall's Kotzebue Sound record. "A large dark Petrel repeat-

* As described and figured by Cassin in 1855. Illust. B. Cal., etc., p. 272, pl. 45—but whether *leucoparia* of Brandt is another question.

edly seen" on the way south from the Aleutians is supposed to have been *Cymochorea melæna* (Bp.) Coues. In the same course, for nearly a thousand miles "scarcely a day passed but a Petrel with the belly white" was seen; this is identified as *Fregetta grallaria*, not impossibly correctly, though the identification of most Petrels on the wing is too difficult to make this case satisfactory.

*Colymbus adamsi* and *C. pacificus* are both given, as full species, and as occurring besides *C. torquatus* and *C. arcticus*.

Of *Alcidæ*, no fewer than fifteen representatives are given, *Synthliborhamphus wurmezusume* not included. The most important point in this connection is made in the rediscovery and perfect identification of *Brachyrhamphus kittlitzii* of Brandt, long a doubtful bird to American ornithologists, no specimen being known in this country. Mr. Nelson took one in breeding plumage in the spring of 1877, at Ounalaska, and afterward another was secured by Mr. Turner further west in the Aleutian chain. We have had the pleasure of handling Mr. Nelson's specimen, among many other of his birds kindly submitted to our inspection. It is certainly distinct from any Auk known to us when our monograph of the family was prepared, and we have no doubt of the accuracy of the identification which has been made. A colored plate will probably be published in another connection.

What general criticism we might pass upon this notable paper would add nothing to its value, and may be gathered from what has preceded. Obscure as it is upon some points, and much as it lacks of detailed information respecting the nesting and eggs of sundry notable Arctic birds, we cannot be too thankful for what we are here given of novelty, variety, and interest. We should not omit to add that it is illustrated with four colored plates, executed by Mr. Ridgway, representing *Motacilla ocularis*, *Lanius cristatus*, *Eurynorhynchus pygmæus*, and *Ciceronia pusilla*, all of life size and equally handsome. — E. C.

**Cory's Beautiful and Curious Birds.**—The recent appearance of Part VII completes the work, which consists of twenty plates, with accompanying text. Ten of the plates relate to as many species of Birds of Paradise; others include the Dodo, the Kiwi (*Apteryx australis*), the Lyre Bird, the Ruff, the Spotted Bower Bird, the Black-headed Plover or Crocodile Bird, and the Sacred Ibis, besides such American species as the Great Auk, the Labrador Duck, and the California Condor. The plates, in part drawn and lithographed by the well-known bird-artist Smidt, are superb illustrations of some of the most striking forms of bird-life. While not, from the nature of the subjects, of high scientific value, it is a work of art and natural history combined, and as such will be welcomed by lovers of birds and fine books. It is dedicated to Mr. J. A. Allen.—W. B.

**Stejneger and Ridgway on Birds of the Commander Islands.**—In a letter* dated Bering Island, September 30, 1882, addressed to Prof. Baird,

* Contributions to the History of the Commander Islands. No. 1. Notes on the Natural History, including Descriptions of New Cetaceans. By Leonhard Stejneger. Proc. U. S. Nat. Mus., 1883, pp. 58-89. July 21, 1883.

Dr. Stejneger has given a preliminary account of his journey to and work at Bering Island, a locality of special interest as being the point where Steller, a century ago, passed some time in studying the fauna, and where he wrote his celebrated memoir on the northern sea cow (*Rhytina gigas*) and some of the large marine Carnivora of Bering Sea. It is therefore a locality of historic interest, as well as one offering great promise of remains of the extinct sea cow, many of which Dr. Stejneger obtained. At the date of his letter he had already devoted some months to the study of the natual history of the island, and his narrative relates to the fauna in general. Besides treating at length of some of the more interesting of the marine mammals, and including many notes on the invertebrates, the narrative contains much that relates to the birds. Special but unsuccessful search was made for the Great Northern Sea-Eagle (*Thalassaëtus pelagicus*) and Pallas's Cormorant (*Phalacrocorax perspicillatus*), there being "no hope whatever of getting a specimen of the latter, and very little of obtaining the former from Bering Island," their assigned habitat. The Cormorant, he states, appears to have been exterminated by the natives some thirty years ago. Dr. Stejneger, however, discovered there a large Sea-Eagle, which he believes must be new, and which Mr. Ridgway has since described (*Haliaëtus hypoleucus* Stejn. MS.) as such from specimens obtained by Stejneger. He also obtained several Passerine birds and Sandpipers believed by him to be new, and three of the former have now been described as new by Mr. Ridgway, as noted below.

Dr. Stejneger collected sixty-one species of birds from Bering Island, while ten others were observed. A number of additional species were obtained at Petropaulski. The ornithological matter in the present paper occupies pp. 65-74, besides passing mention of birds elsewhere. In addition to notes at some length on the more interesting species, considerable space is devoted to observations on the change of color in the Ptarmigans (*Lagopus albus**), but no satisfactory solution of the problem is reached.

Mr. Ridgway,† upon examination of Dr. Stejneger's material, has described the following species as new: (1) *Haliaëtus hypoleucus* Stejn., MS.; (2) *Acrocephalus dybowskii* Stejn., MS.; (3) *Anorthura pallescens* Stejn., MS., of the size and proportions of *A. alascensis*, but "in coloration entirely different"; (4) *Hirundo saturata* Stejn., MS., "similar to *H. erythrogastra*, but much more richly colored beneath," etc. For a species described and doubtfully referred to *Anthus japonicus* Tem. and Schl., is proposed the name "*A stejnegeri*, sp. nov., if new."—J. A. A.

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* We are informed by the author that what is here called *Lagopus "albus"* turns out to be a form of *L. mutus;* while *Leucosticte "brunneinucha"* (p. 71) is a slip of the pen for *L. griseinucha.*

† Descriptions of some Birds supposed to be undescribed, from the Commander Islands and Petropaulovski, collected by Dr. Leonhard Stejneger, U. S. Signal Service. Proc. U. S. Nat. Mus., 1883, pp. 90-96. July 21, 1883. Vol VI

**Ridgway on New Species of American Birds.** — Mr. Ridgway separates as a new subspecies the Warbler from Santa Lucia, W. I.,* hitherto known as *Dendræca adelaidæ*, under the name *Dendræca adelaidæ delicata*, the Santa Lucia form differing quite markedly in coloration from Porto Rico examples, on which the species was originally based. He also describes a supposed new Plover (*Ægialites albidipectus*, sp. nov.) based on a single example from Chili, † and a new Petrel (*Œstrelata fisheri*, sp. nov.) from Alaska,‡ a species most nearly allied to *Œ. defillipiana*. Mr. Ridgway is inclined to refer also the Petrel taken in Livingston County, N. Y., identified by Mr. Brewster (Bull. N. O. Club, VI, 1881, pp. 91-97) as *Œ. gularis*, to *Œ. fisheri*.—J. A. A.

**Ridgway on the Genus Tantalus.**§ — The genus *Tantalus* Linn, is restricted to *T. loculator*, while *T. leucocephalus* of India, *T. longuimembris* of Southern China, and *T. lacteus* of Java and Sumatra, together with *T. ibis*, are separated under the new generic name *Pseudotantalus*.—J. A. A.

**Belding on Birds of Lower California.**—These collections ‖ were made at several different points, as follows: (1) Coronados Islands, about 20 miles south and west of San Diego, 3 species. (2) San Quentin Bay, west coast of Lower California, lat. 39° 23′, 17 species. (3) Santa Rosalia Bay, two degrees further south, on the same coast, 7 species. (4) Cerros Islands, some thirty miles further south, 20 species. (5) La Paz and San José del Cabo, southern extremity of the peninsula, about 130 species. Mr. Ridgway has added (chiefly to the second paper here noticed) various technical notes, the more important relating to (1) *Polioptila cærulea*, the darker western race of which is provisionally named *P. cærulea obscura*, (2) *Siurus nævius notabilis*, (3) *Passerculus rostratus*, giving extensive tables of measurements and comparisons of the latter with *P. guttatus* and *P. sanctorum* (Coues, MS.). Very little field work having been done in the region reported upon in Belding's second paper since the well known explorations of Mr. John Xantus in 1859, Mr. Ridgway has collated therewith the results of Mr. Xantus's work, by giving a list of those species found by Mr. Xantus (derived mainly from the record books of the Na-

* Description of a New Warbler, from the Island of Santa Lucia, West Indies. By Robert Ridgway. Proc. U. S. Nat. Mus., 1882, pp. 525, 526. Feb. 28. 1883.

† Description of a supposed New Plover, from Chili. By Robert Ridgway. Proc. U. S. Nat. Mus., 1882, pp. 526, 527. Feb. 28, 1883.

‡ Description of a New Petrel from Alaska. By Robert Ridgway. Proc. U. S. Nat. Mus., 1882, pp. 656-658. June 26, 1883.

§ On the Genus Tantalus, Linn., and its allies. By Robert Ridgway. Proc. U. S. Nat. Mus., 1882, pp. 550, 551. March 21, 1883.

‖ 1. Catalogue of a Collection of Birds made at various points along the Western Coast of Lower California, north of Cape St. Eugenio. By L. Belding. Edited by R. Ridgway. Proc. U. S. Nat. Mus., 1883, pp. 527-532. March 21, 1883.

2. Catalogue of a Collection of Birds made near the Southern Extremity of the Peninsula of Lower California. By L. Belding. Edited by Robert Ridgway. Proc. U. S. Nat. Mus., 1883, pp. 532-550. March 21, 1883.

tional Museum) which Mr. Belding did not obtain, and by indicating those in Mr. Belding's lists met with by Mr. Xantus. "The total number of species amounts to 130. . . . Of the species collected by Xantus 34 were not found by Mr. Belding, who, however, obtained or observed 39 species not represented in Xantus's collections." Mr. Belding's two papers form an important contribution to the subject of the distribution of the birds of the southern portion of the peninsula of Lower California, showing that the bird-fauna is more closely allied to that of the United States than with that of the adjoining portion of Mexico.—J. A. A.

**Ridgway and Nutting on Costa Rican Birds.*** — The collection reported upon was made partly at Volcan de Irazú and partly at San José. At the former locality 32 species were obtained, including five examples of the hitherto very rare *Junco vulcani*, which was here found to be abundant, and 33 from the latter. There are brief field-notes by the collector and technical notes on a few species by Mr. Ridgway.—J. A. A.

**Brewster on the "Birds and Fethered Fowles" of Morton's 'New English Canaan.'†**—Mr. Adams,* in reprinting Thomas Morton's 'New English Canaan' (published originally in 1637), with editorial notes, has called to his aid the services of a number of specialists in different fields, and has carefully collated therewith the works of Morton's contemporaries, notably those of Wood, Josselyn, and Higginson. The technical notes on the birds, by Mr. Brewster, form an excellent commentary on the species mentioned by Morton, while the editor has added parallel passages from the writings of the early authors above named, thus bringing together all the important matter relating to birds contained in these early accounts of New England. Morton's 'New English Canaan,' as thus admirably edited, includes nearly everything of interest bearing upon the natural history of New England contained in these early records, and is thus of special value in its bearing upon New England ornithology of the seventeenth century. The work is limited to 250 copies, and in typography and paper is a noteworthy specimen of book-making.—J. A. A.

**Gill's Record of Ornithological Progress in 1881.‡**—Dr. Gill here gives a partial bibliography of noteworthy papers and works, and a synopsis of about half-a-dozen memoirs, including Ridgway's 'Nomenclature of North American Birds,' of Marsh's paper on the characters of *Archæopteryx*, and of his account of *Laopteryx priscus*, a fossil bird from the Upper Jurassic of Wyoming Territory.—J. A. A.

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*Catalogue of a Collection of birds made in the Interior of Cost Rica by Mr. C. C. Nutting. By Robert Ridgway. Proc. U. S. Nat. Mus., 1882, pp. 493-502. Feb. 28, 1883.

† The New English Canaan of Thomas Morton. With Introductory Matter and Notes by Charles Francis Adams, Jr. Boston: Published by the Prince Society. 1883. Sm. 4to. pp. vi + 381.—Chap. IV. Of Birds and Fethered Fowles, pp. 189-199. With notes by William Brewster and the Editor.

‡ Record of Scientific Progress for 1881. Zoölogy. By Theodore Gill. Smithsonian Report, 1881 (1883), pp. 408-498. Birds, pp. 481-490.

**Birds of Western Ontario.**—Messrs. Morden and Saunders have recently published a briefly annotated 'List of the Birds of Western Ontario,'* based on observations "made at and near Hyde Park, London, Mitchell's Bay, Point Pelee, and Lucknow," and numbering 236 species. The list has evidently been prepared with much care and forms a valuable addition to our knowledge of the distribution of Canadian birds. Among southern species included we note the Swallow-tailed Kite, the Cardinal Grosbeak, the Blue-gray Gnatcatcher, Hooded Warbler, Mocking Bird, Rough-winged Swallow, Turkey Buzzard, Avocet, Great White Egret, Glossy Ibis, etc.; and among northern species the Bohemian Waxwing, Evening Grosbeak, both species of Three-toed Woodpeckers, the Cinereous Owl, Hawk Owl, etc. Comparison with Mr. McIlwraith's well-known excellent list of the birds of Hamilton, Ont., published in 1866, shows that, while it contains 5 species less than that, it includes 19 not enumerated in the Hamilton list.

In this connection attention should be called to Mr. McIlwraith's recent interesting collation of the two lists,† his article forming an instructive commentary on the general subject, and at the same time a supplement to his own earlier list, he adding 7 species not contained in either of the two lists here under notice, raising the number of species thus far noted in Western Ontario to 260.—J. A. A.

**Minor Ornithological Publications.**‡—The 'American Naturalist,' Vols. XV (1881), XVI (1882), XVII (1883), contains (besides various extracts from 'Forest and Stream,' 'Ornithologist and Oölogists,' and other journals) the following original notes and articles (Nos. 455-503):—

455. *Habits of the English Sparrow in the United States.* By Henry Gillman. *Amer. Nat.*, XV, pp. 139, 140.

456. *Migrations of the Sand-Hill Crane.* By F. E. L. Beal. *Ibid.*, XV, pp. 141, 142.

457. *A Collector's Notes on the Breeding of a few Western Birds.* By E. [=G.] Holterhoff, Jr. *Ibid.*, XV, pp. 208-219.—Interesting notes on about 40 species of birds observed in Arizona and Southern California, some of them previously very little known.

458. *Notes on a few of the Diseases and Injuries in Birds.* By R. W. Shufeldt, M. D., U. S. A. *Ibid.*, XV. pp. 283-285.

459. *Value of the House Wren as an Insect Destroyer.* By Charles Aldrich. *Ibid.*, XV, pp. 318, 319.

460. *Our Social Blue Jays.* By Charles Aldrich. *Ibid.*, XV, p. 319.

461. *The English Sparrow in Illinois.* By S. A. Forbes. *Ibid.*, XV, pp. 392, 393.

462. *Red-winged Starlings.* By Charles Aldrich. *Ibid.*, XV, pp. 293, 294.—Observed at Webster City, Iowa, in December.

* List of the Birds of Western Ontario. By J. A. Morden and W. E. Saunders' Canadian Sportsman and Naturalist, Vol. II, Nos. 11 and 12, pp. 183-187, 192-194. November and December, 1882.

† Canadian Sportsman and Naturalist, Vol. III, pp. 198-200, Jan. 1883.

‡ Continued from Bulletin Nuttall Ornithological Club, Vol. VIII, p. 238.

463. *The Indigo Bird.* By Charles Aldrich. *Ibid.*, XV, p. 394.—Not uncommon at Webster City, Iowa.

464. *Birds out of Place.* By Charles Aldrich. *Ibid.*, V, pp. 476, 477.—Red-winged Blackbirds and Robins seen in December and January at Webster City, Iowa.

465. *Curious Instances in the Breeding Habits of the Bluebird.* By A. M. Reynolds. *Ibid.*, XV, p. 478.

466. *The Eastern Snowbird.* By Rev. Samuel Lockwood, Ph. D. *Ibid.*, XV, pp. 518-526.

467. *The Great Crested Flycatcher.* By Mrs. Mary Treat. *Ibid.*, XV, pp. 601-604.

468. *Brief Notes on Some Iowa Birds.* By Charles Aldrich. *Ibid.*, XV, pp. 654-656.—On the Indigo Bird, Robin, and Blue Jay.

469. *Habits of the Yellow-bellied Woodpecker.* By H. C. Bumpus. *Ibid.*, XV, p. 738.

470. *Breeding Habits of the Fish Hawk.* By H. C. Bumpus. *Ibid.*, XV, pp. 809, 810.

471. *Blackbirds* [*Quiscalus æneus*] *Catching Fish.* By Charles Aldrich. *Ibid.*, XV, p. 810.

472. *Unusual Actions of a Hen Turkey.* By John M. Coulter. *Ibid.*, XV, p. 812.

473. *The Blue Gull.* By Charles Aldrich. *Ibid.*, XV, pp. 812, 813.—"A small blue gull" spoken of as following a plowman to devour the "worms and bugs turned up to the surface," seizing them gracefully "without setting a foot upon the ground."

474. *Notes on the Migrations of Birds.* By H. D. Minot. *Ibid.*, XV, pp. 870-872.—Based on observations made in Western Connecticut, from October, 1880, to May, 1881.

475. *The Claw on the Index Digit of the Cathartidæ.* By R. W. Shufeldt, M. D. *Ibid.*, XV, pp. 906-908. (Noticed in Bull. N. O. C., VII, 46.)

476. *Braving the "Blizzards."* By Charles Aldrich. *Ibid.*, XV, p. 903.—Nest with three eggs of "that little winter Snow-bird (*Plectrophanes nivalis*, as I suppose)"—doubtless really *Eremophila alpestris*—found during a "bitter day" in March, near Ames, Iowa.

477. *The Blue Jays.* By Charles Aldrich. *Ibid.*, XV, p. 904.—A permanent resident at Webster City, Iowa (!), and believed to have been seen feeding their young early in May.

478. *Does the Crow Blackbird eat Crayfish?* By F. E. L. Beal. *Ibid.*, XV, pp. 904, 905.—Found to have swallowed "gastroliths, or stomach stones of the crayfish," hence the question.

479. *Terns as Flycatchers.* By J. E. Todd. *Ibid.*, XV, p. 1005.—*Hydrochelidon lariformis* noticed catching dragonflies.

480. *Does the Crow Blackbird Eat Crayfish?* By Charles Aldrich. *Ibid.*, XVI, pp. 57, 58.—The question answered affirmatively. (See above, No. 478.)

481. *Wild Birds Racing with the Cars.* By Charles Aldrich. *Ibid.*, XVI, p. 58.

482. *The Sparrow Pest in Australia.* By Elliott Coues. *Ibid.*, XVI, pp. 140, 141.

483. *The Claw on the "Index" Finger of the Cathartidæ.* By W. A. Forbes. *Ibid.*, XVI, pp. 141-142.

484. *Nesting Habits of the Horned Lark.* By F. E. L. Beal. *Ibid.*, XVI, pp. 240, 241.—Snow seen "blowing over the nest and mother bird when the weather was as severe as midwinter."

485. *Wild Geese as Pests.* By R. E. C. Stearns. *Ibid.*, XVI, p. 326.—By pulling up the young wheat in the grain fields of the Upper San Joaquin Valley, California.

486. *The Acorn-storing Habit of the California Woodpecker* [*Melanerpes formicivorus*]. By Robert E. C. Stearns. *Ibid.*, XVI, pp. 353-357.

487. *The European House Sparrow.* By Elisha Slade. *Ibid.*, XVI, pp. 402, 403.—On its pugnacity toward other birds, etc.

488. *Habits of the Woodcock.* By F. L. Harvey. *Ibid.*, XVI, pp. 737, 738.—Transporting its young between its feet.

489. *Number of Bones at present known in the Pectoral and Pelvic Limbs of Birds.* By R. W. Shufeldt. *Ibid.*, XVI, pp. 892-895.

490. *Food of the Nestlings of Turdus migratorius.* By Elisha Slade. *Ibid.*, XVI, pp. 1007, 1008.

491. *More Complaints about Passer domesticus.* By J. Schneck. *Ibid.*, XVI, p. 1008.

492. *Habits of the English Sparrow.* By Elliott Coues. *Ibid.*, XVI, p. 1009.

493. *How Bad Weather Affects the Birds.* By Charles Aldrich. *Ibid.*, XVI, p. 1010.

494. *The Nesting of the Black-and-white Creeper.* By A. G. Van Aken, *Ibid.*, XVII, pp. 103-105.

495. *A Bewildered Snow-Bird.* By Charles Aldrich. *Ibid.*, XVII, p. 105.

496. *A Study of the Immature Plumage of the North American Shrikes, to show their Descent from a Common Progenitor.* By Thomas H. Streets, M. D. *Ibid.*, XVII, pp. 389-391.

497. *A many-named Bird* [*Botaurus lentiginosus*]. By J. E. Todd. *Ibid.*, XVII, pp. 431, 432. — Reference to its various vernacular names.

498. *The Hairy Woodpecker.* By A. G. Van Aken. *Ibid.*, XVII, pp. 511-515. — On the habits of *Picus villosus.*

499. *The Hairy Woodpecker, a correction.* By T. J. Burrill. *Ibid.*, XVII, p. 673. — Relates to the article last cited.

500. *The Power of Scent in the Turkey Vulture* [*Cathartes aura*]. By Samuel N. Rhoads. *Ibid.*, XVII, pp. 829-833.

501. *King-birds, Tyrannus intrepidus, feeding their young upon Fruit* By Elisha Slade. *Ibid.*, XVII, pp. 887-888.

502. *The English Sparrow in Canada.* By T. McIlwraith. *Ibid.*, XVII, pp. 894-895. — Their attacks on various native birds, and destruction of fruit-buds of grapes.

503. *Gallant Conduct of a Robin.* By Samuel Lockwood. *Ibid.*, XVII, p. 1307.

The 'Canadian Sportsman and Naturalist,' Volumes I and II,* Jan. 1881, Dec. 1882, contains the following (Nos. 504-522): —

504. *The Barred Owl* [*Syrnium nebulosum*]. By R. Rowe. *Canadian Sportsman and Naturalist*, Vol. I, p. 27. — Its abundance at St. John, N. B., in the winter of 1880-81. Notes also the capture there of various other species.

505. *Bird Nesting in Labrador* [Editorial?]. *Ibid.*, I, pp. 50-52.— Relates chiefly to water birds breeding on the coast of Labrador.

506. *Rare Birds in Canada.* By C. [=W. Couper]. *Ibid.*, I, p. 68.— "Blue Bunting (*Cyanospiza parellina* [sic])" and Yellow-headed Blackbird, the latter at Godbout, Lower St. Lawrence. Also at same place *Parus hudsonicus* nesting.

507. *Canadian Birds. List of Birds obtained and observed by Professor Macoun at and near the City of Belleville, County Hastings, Ontario, in the Spring of A. D. 1881, with remarks by Professor J. T. Bell, of Albert University. Ibid.*, I, pp. 84, 86. — A nominal list of 75 species. A note follows, signed "C." (=W. Couper), criticising the nomenclature of the list (that of Dr. Jordan's well-known 'Manual'), in which the writer displays surprising ignorance of the subject, he apparently having heard of nothing later bearing on it than Baird's 'Report' of 1858! To these strictures Professor Bell makes a fitting reply (*Ibid.*, I, p. 95).

508. *Ornithology of the Island of Montreal.* By Ernst D. Wintle. *Ibid.*, II, pp. 108-110, 116, 117. — A briefly annoted list of 168 species, based on observations covering seven years.

509. *The Red Crossbill* (*Loxia Curvirostra. — Lin.*). By J. H. Garnier. *Ibid.*, II, pp. 111, 112. — Habits and nesting near Lucknow, Ont.

510. *Ornithological Queries.* By C. [=W. Couper]. *Ibid.*, II, pp. 115, 116, 136, 141, 175. — Respecting the nesting habits and distribution of many of the rarer birds of Canada.

511. *The Nidification of Nuthatches.* By W. W. Dunlop. *Ibid.*, pp. 122, 123, 137, 138.

512. *Reply to Ornithological Queries. Ibid.*, II, pp. 123, 124. Two articles by respectively Wm. L. Kells and Harold Gilbert. They relate to the Whippoorwill, Winter Wren, Hudsonian Titmouse, and Red-bellied Nuthatch.

513. *Notes on the Natural History of Lucknow, Ont.* By J. H. Garnier. *Ibid.*, II, pp. 125, 126. — Contains notes on some of the rarer Waders and Swimmers.

514. *Supposed Nests of the Crossbill* [*Loxia curvirostra*]. By W. L. Kells. *Ibid.*, II, pp. 138. — Near Listowel, Ont.

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* The Canadian Sportsman and Naturalist: A Monthly Journal. Vol. I, Jan. 1881-Dec. 1881, 8vo., pp. 1-96, Montreal, Can.: William Couper, Editor; W. W. Dunlop, Assistant Editor. Vol. II, pp. 97-196, 1882, Montreal, Can.: William Couper, Editor. The first volume of this periodical was devoted largely to sporting matters, particularly hunting and fishing, contained very little about ornithology, and this mostly of slight value. More space is given in volumes II and III to natural history, with a marked increase in the quantity and great improvement in the quality of the ornithological matter.

515. *Sitta canadensis.* By Harold Gilbert. *Ibid.*, II, p. 138. — On its nesting and northern winter limit.

516. [*Whippoorwill*]. By W. L. Scott. *Ibid.*, II, 138, 139. — Its nesting and range in Canada.

517. *The Birds of Prey of Nova Scotia.* By J. Bernard Gilpin, A. B., M. D., M. R. C. S. *Ibid.*, II, pp. 139, 140, 153-155.

518. [*Whistling Swan* (*Cygnus americanus*), *etc.*]. By Harold Gilbert. *Ibid.*, II, p. 144. — Its capture near St. John, N. B., and notes on several winter birds.

519. *Tit Lark* (*Anthus ludovicianus*). By Chas. J. G. Fraser. *Ibid.*, II, p. 152. — Nesting near Galts, Ont. Thought to be the "Shore Lark (*Eremophila cornuta*)" by W. E. Saunders (*Ibid.*, p 163).

520. *Rare Birds in Ontario.* By John A. Morden. *Ibid.*, II, pp. 162, 163. — Relates chiefly to the Lapland Longspur, at Mitchel's Bay, Ont.

521. *List of the Birds of Western Ontario.* By J. A. Morden and W. E. Saunders. *Ibid.*, II, pp. 183-187, 192-194. — An annotated list of 236 species. (Already noticed *anteà*, p. 85.)

522. *Canadian Oölogy.* By Wm. L. Kells. *Ibid.*, II, pp. 195, 196. — Brief informal reference to various species.

**Publications Received.**—**Shufeldt**, R. W. Observations upon the Osteology of Podasocys montanus. (Journ. Anat. and Phys., Vol. XVIII.)

**Coues**, E. A Hearing of Birds' Ears. (Science, Vol. II, Nos. 34, 38, 39.)

**Morden** and **Saunders**, List of the Birds of Western Ontario. (Canad. Sports. and Nat., 1882, Nos. 11, 12.)

**McIlwraith**, T. [Birds of Western Ontario.] (Ibid., 1883, No. 1.)

**Stearns**, W. A. Notes on the Natural History of Labrador. (Proc. U. S. Nat. Mus., 1883.)

**Stejneger**, L. On the Systematic Arrangement of the American Turdidæ. (*Ibid.*, 1882.)

**Collett**, R. Ardetta minuta, Sterna cantiaca, og Larus minutus, nye for Norges Fauna. (Vid.-Selsk. Forh., 1883.)

**Nelson**, E. W. The Birds of Bering Sea and the Arctic Ocean. (Cruise of the 'Corwin,' 1883.)

**Bulletin** of the Essex Institute, Vol. XIV, Nos. 7-12.

**American** Naturalist, Vol. XVIII, No. 1, Jan. 1884.

**Zoölogist**, Dec. 1883.

**Ornithologist** and Oölogist, Jan. 1884.

**Science** Record, Vol. II, No. 1.

**Bulletin** of the Nat. Hist. Soc. of New Brunswick, No. 2, 1883.

**Ann.** Rep. Mus. Comp. Zoölogy, 1882-3.

## GENERAL NOTES.

**Abnormal Coloration in a Caged Robin.**—Through the kindness of its owner, Mr. A. R. Crittenden, I have recently examined a caged Robin (*Turdus migratorius*) which is now in peculiar plumage, and which has a somewhat unusual history. When taken from the nest, about six years ago, it was perfectly normal in color of plumage, and so remained for two years. It has moulted once a year, in early autumn. After the fourth moult a few white feathers were noticed, and here and there a black one, but it was not until the following year—after the fifth moult—that the change was marked. The bird then appeared with wings and tail almost completely white, while below he was clear *black*, except for a side patch of red under each wing, and the usual white belly. The following winter (last winter), he came out in perfectly normal plumage, though Mr. Crittenden thinks the colors were unusually rich.

This winter, again, the abnormal dress has been assumed, but varying somewhat in detail. He now appears as follows: Above clear black; tail mostly white; interscapulars and most of the wing-feathers white on outer webs; chin, throat, belly, and under-tail coverts normal. The upper breast shows a somewhat crescent-shaped patch of red, and almost as continuations of this on either side are red patches under the wings. A few red feathers down the middle of the breast imperfectly separate the black which would otherwise form a single large pectoral patch. The white about the eyes is normal. The bird is a male, apparently in perfect health, and with a voracious appetite. His food has been principally one part prepared Mocking-bird food to three parts Indian meal, the whole mixed together with a teaspoonful of melted lard. In addition to this he has had only a little fruit and a few insects, mostly house-flies.—W. B. BARROWS, *Middletown, Conn.*

[Two previous instances of melanism in the Robin have been recorded in the 'Bulletin of the Nuttall Ornithological Club' (Vol. I. p. 24; Vol. III. p. 47).—EDD.]

**Nest and Eggs of the Ruby-crowned Kinglet** (*Regulus calendula*).—My friend, Mr. Frank W. Ritchie, of Ottawa, who is at present attending Bishop's College, at Lennoxville, Quebec, has kindly furnished me with the following description of these rarities for publication in 'The Auk.'

"A nest of the Ruby-crowned Kinglet was found by two friends of mine, near Lennoxville, on May 15, 1882. The nest was pensile, and was attached to a branch of a small tree, a few feet from the ground. It was composed of fine moss, evenly and firmly felted, and was lined with bright feathers of the Wild Pigeon. The inside was almost entirely hidden from view by the upper feathers of the lining being caught at the edge of the nest; curving gracefully toward the centre, their points almost meeting, they left but a small opening. The nest measured ten inches in cir-

cumference outside, and was three inches in depth inside. It contained nine eggs, one of them a Cow Bunting's. One of the Kinglet's eggs which I examined, and which is still preserved in the Museum of Bishop's College, measures .53 × .40. It is of a dirty creamy-white ground-color, clouded with small, faint spots of a darker tint, which are irregularly distributed over the entire surface, excepting near the larger end, where there is a band of dull yellowish-brown. The centre of this band is darkest, the color gradually lessening in intensity toward the edges.

"The identification of the parents was nearly perfect. My friends were very familiar with the species, and examined these birds several times, as they sat on the nest or perched on the adjoining boughs."

I am informed by Mr. Ritchie that the nest has been destroyed and only the one egg remains of the clutch. Through Mr. Ritchie's kind office the President of the College has courteously permitted this egg to be sent to me for examination so that I am enabled to verify the description given.

Mr. Ritchie states that another of the eggs of this clutch which he had compared with the one described was of exactly the same size, color, and markings.—MONTAGUE CHAMBERLAIN, *St. John, N. B.*

**Thryothorus ludovicianus in Massachusetts.**— An adult specimen of *Thryothorus ludovicianus* was killed on the 4th of November last, by Mr. Arthur Smith, in Brookline, Mass. The specimen is now in my cabinet. —C. B. CORY, *Boston, Mass.*

**Another Example of Helminthophaga leucobronchialis from Connecticut.** — Through the kindness of Mr. Harry W. Flint, of Deep River, Conn., I have the pleasure of examining a specimen of this Warbler killed by him, May 18, 1880, at Deep River. It shows a slight suffusion of yellow under each eye and on the sides of chin, and the pectoral region is washed with the same color, which extends over the abdomen nearly to the tail. The wing-bands are very much restricted, and the white is tinged with yellow. This is, I believe, the thirteenth known example and the fifth reported from Connecticut.—JNO. H. SAGE, *Portland, Conn.*

[I am indebted to Mr. Sage for an opportunity of examining the specimen above mentioned. It differs from the type, as well as from all the other examples which I have seen, in having the yellow of the forehead partially obscured by a superficial mark of greenish-olive, in the unusual restriction of the wing-bands, and in the generally immature appearance of the plumage. These characteristics are just what we should expect in the female of *leucobronchialis*, and I doubt not that the collector's mark of ♀ is correct.— WILLIAM BREWSTER.]

**Nest and Eggs of Myiadestes townsendi.**— Through the kindness of Mr. L. Belding, I am able to add the following to what is already known of the nest and eggs of *Myiadestes townsendi*. Of four nests of which I have notes, three were placed either on the ground or in a slight depression, giving the nest a saucer shape. In each case concealment had been

attempted by the aid of weeds, a stone, or a large piece of bark. One nest was built on the ground, within a semicircular cavity of a standing tree. The nests were composed mostly of pine needles. One had a lining of soap-root fibre, and another was built of pine needles upon a slight foundation of small sticks. Three nests, taken by Mr. Belding at Big Trees, Cal., June 8 and 9, 1879, and June 10, 1880, contained each four nearly fresh eggs. A set of four, taken at Big Trees, June 15, 1883, from the side of a stump, fifteen inches from the ground, are now before me. They correspond closely to Dr. Coues's description of the eggs of this species given in the last number of the 'Bulletin of the Nuttall Ornithological Club' (VIII, p. 239). The measurements, which I can take from two, are .89 × .70, and .93 × .70.— W. E. BRYANT. *Oakland, Cal.*

**Prehensile Feet of the Crow** (*Corvus frugivorus*).— Apropos of what has lately been published regarding the power of the Crow to carry objects in its claws I will give my latest note on the subject.

I was attracted to a bunch of trees by a commotion among a troop of Robins, and discovered some six individuals fiercely attacking a Crow, a second black form being detected skulking some little distance away. Presently Crow number one flew off, followed by the entire mob of excited Red-breasts, when Crow number two made a dash into the trees, and emerged with an unfledged Robin grasped in his dexter claws; the youngster kicking and piping lustily. The cries brought back the guardians, who at once gave chase to the captor, and while they were off in one direction, Crow number one charged the nest from an opposite point, and retired with another of the brood firmly held in his claws.—MONTAGUE CHAMBERLAIN, *St. John, N. B.*

**Do Crows carry objects in their Claws?**—There is a habit assigned to Crows in Eastern Maine, which, if well authenticated, has an interest in the discussion of the question whether they can transport objects in their claws.

Near Eastport, Maine, there is known to me a considerable deposit of the broken tests and half-decomposed soft parts of our common New England sea-urchin (*S. drœbachiensis*), far removed above the level of high water. This deposit is formed in the main of fragments of the solid tests of these echinoderms, which are said to have been carried there alive by Crows, which frequent the locality in great numbers. At a loss to account for the appearance of these fragments in this unusual locality, I made inquiries of several persons living in the neighborhood, all of whom declared that the sea-urchin remains were brought by the Crows from the shallow water not far off. One intelligent person, not a naturalist, said he had observed the Crows *transporting them in their claws.* Although I can add nothing to this testimony from personal observation, I am familiar with several other accumulations of these marine animals in localities above high tide, from which I have observed Crows to fly up when startled. I cannot tell whether the Crows at such times were feed-

ing upon the sea-urchins or not, although several of the echinoderms still had their soft parts adhering to the "shells." Our sea-urchin is often left by a retreating tide in the pools where it could be easily seen and taken without difficulty by the Crows. In autumnal and winter gales multitudes are washed up on the beaches to the line of the highest reach of the tides.—J. WALTER FEWKES, *Cambridge, Mass.*

**Nest and Eggs of Couch's Tyrant Flycatcher** (*T. melancholicus couchi*).—A nest and four fresh eggs, together with both parents of this same species, were taken by my collector, Mr. Bourbois, at Lomita Ranch, on the Rio Grande, Texas, in 1881. I believe this set to be unique (at least so far as the United States fauna is concerned), and worthy of a description.

The nest was situated some twenty feet from the ground, on a small lateral branch of a large elm, in a fine grove not far from the houses of the ranch. It is composed of small elm twigs, with a little Spanish moss and a few branchlets and leaves of the growing elm intermixed. The sides of the nest are lined with fine rootlets, the bottom with the black hair-like heart of the Spanish moss. The outside diameter is 6 inches, and the depth 2 inches. The inside diameter is 3 inches, and the depth 1.25 inches.

The eggs, while having a general resemblance to those of all our Tyrant Flycatchers, are quite distinct in form, size, and ground-color from any others I have seen. The blotches, too, are more numerous and smaller. The large end is very round, and the small end quite pointed. The measurements of the four eggs are as follows: 1.00 × .76, .99 × .76, .98 × .76, .97 × .72, averaging .985 of an inch in length and .75 of an inch in breadth. The ground-color is a rich buff. The general color of the blotches is similar to that of the Kingbird's eggs, and their distribution irregular over the entire egg, but massed about the greatest diameter.

If this set proves to be typical I should have no trouble in selecting the eggs of this species from any number of eggs of other species of the genus.—GEO. B. SENNETT, *Meadville, Pa.*

**Recent Occurrence of the Black-backed Three-toed Woodpecker in Massachusetts.**—Mr. E. H. Richards of Woburn, Mass., writes me that two specimens of *Picoides arcticus* have been taken in that town the past autumn. The first was shot Oct. 16, the other two days later. Both were adult males. A third example was also seen Oct. 21, in Holbrook, Mass. —WILLIAM BREWSTER, *Cambridge, Mass.*

**A Woodpecker destroying Cocoons.**—This habit of the Woodpecker is something new to me, and may have an interest for others. It was observed by my friend, Mr. Frank W. Ritchie, who, writing from Lennoxville, Quebec, under date of November 21, says: "A few days since I discovered a Downy Woodpecker tearing open a cocoon. I drove the bird away several times, but it persisted until it had gathered the contents. I also noticed near by two other cocoons which had been emptied similarly."— MONTAGUE CHAMBERLAIN, *St. John, N. B.*

**The Nest of the Saw-whet Owl.**—In April, 1881, I was camped near the base of Mt. Katahdin, while on a trip in that section in search of the eggs of our Birds of Prey. The weather at that time being quite cold, it was necessary to frequently replenish the fire. About 3 o'clock in the morning I arose for that purpose, and noticed a small object moving around amongst the remains of our last meal. Further investigation proved it to be some kind of small Owl, gleaning among the bones for stray morsels of meat. On my near approach it flew into a tall fir, and was hid from sight. During breakfast I again saw it, coming down to within a few feet of us, when, apparently seeing us for the first time, it again retreated to the fir. I then saw it was a Saw-whet Owl, and it seemed to be in no wise affected by the light. At night one of my companions informed me he had seen a pair of small Owls sitting together in an immense birch, but no nest could be found.

The next morning we struck camp, and moved toward the summit of the mountain. In about a week we returned over the same route and again camped at the place just mentioned. On the second night I was surprised to see the little Owl come as before. We concluded he must have a nest near, and the next day, April 30, we commenced to search for the nest. In the afternoon one of my guides was so fortunate as to discover the Owl going into a hole made by a Woodpecker, in a large birch. He looked in but could see nothing, and had stopped up the entrance with moss, so that I might see it just as he found it. On going to it and removing the moss I found the entrance quite large, having been slit by some animal trying to effect an entrance. Carefully cutting away the bark below the hole exposed the nest, which was merely a mixture of fine chips and small feathers of the Grouse. It contained the old Owl and three young ones.

I was disappointed at not securing any eggs, but felt amply repaid in viewing one page in the life-history of this little Owl, who sometimes visits me in my more southern home.

The young Owls were wonderfully droll-looking little fellows, and as they gazed at me with upturned eyes from down in the heart of that canoe birch, in the middle of that immense forest, stretching away for mi'es, remote from any human habitation, I thought that single look was worth hours of gazing at prepared specimens, inclosed in mahogany cases, in our scientific museums. The formation of a collection does not constitute all there is in the study of ornithology; and around the memory of the scene in that old Maine forest are clustered affections which time cannot destroy.—F. H. CARPENTER, *Rehoboth, Mass.*

**Another Gyrfalcon in Rhode Island.**—A specimen of the variety *sacer* was killed at Point Judith, R. I., Oct. 11, 1883, by E. S. Hopkins, Esq., of this city. He also killed an adult Duck Hawk the same day, which is the second I have examined from the same locality this month, Mr. R. G. Hazard possessing the first one, a beautiful bird of the year. Gunners on the seaboard report Hawks as being unusually plentiful this autumn.—FRED. T. JENCKS, *Providence, R. I.*

**Breeding Habits of the Everglade Kite.**—My friend, Mr. E. W. Montreuil, had the good fortune this season, while on a collecting trip to Florida, to take a set of eggs of the Everglade Kite, which are now in my possession. As there are so few descriptions of the eggs of this species on record the following notes may be of interest. The eggs measure as follows: 1.91 × 1.50; 1.80 × 1.51; 1.80 × 1.45 (measurements in hundredths of an inch). No. 1 has a ground-color of light brown, nearly obscured by large blotches of dark brown, in some places becoming reddish-brown. No. 2 has the ground-color a dirty white, covered on the larger end by spots and blotches of different shades of brown, which become smaller and fewer at the other end. This specimen resembles the common varieties of eggs of the European Sparrow Hawk (*Accipiter nisus*). Number 3 has a clear ground-color of greenish-white, and on the smaller end are scrawls, lines, and a few spots of light and dark brown. These eggs are larger than those collected by Mr. C. J. Maynard some years since in the Everglades.

I will quote in full from a letter received from Mr. Montreuil about the breeding habits of this Kite. "This bird (*Rostrhamus sociabilis plumbeus*) is found in numbers in the Everglades of Florida, especially on the east side. They lay their eggs early in March, but some pairs later than others, as the set you have were taken March 16 and were fresh, while all the other nests had young in them. When they breed a male and female are by themselves, always near a small island, which they make their rendezvous, and while resting on a branch they can have an eye on their nest for enemies, especially the Crows, who rob their nests whenever they can. Around some of the islands there are several pairs of *Rostrhamus*, but they always place their nests a few acres apart from each other. While going about in an Indian canoe you see the bird flying around, up and down, their wings straight open, fishing for the Everglade shells which are their principal food. When through with their meals they go back to their nests with food for the young, and then they can easily be discovered. They build their nests with dry branches and saw-grasses, attached to saw-grasses, about 12 inches below the tops, just so as to be out of sight. They measure about 12 inches in diameter and 6 inches high, and the cavity is about 3 inches deep. They lay from two to three eggs. The old birds usually bring their throats full of the animals of the Everglade shells, but sometimes they bring the animal in the shell, as many nests contained a lot of these shells. While they have young they are not wild, flying over one's head when near the nest."—H. B. Bailey, *New York City.*

**Nesting of the Broad-winged Hawk** (*Buteo pennsylvanicus*).—As but very few of the nests of this species have been described, an account of one taken by myself, about two miles north of this city, on June 23, 1883, may not be considered superfluous. It was built in a large yellow birch tree, near the margin of a rather open wood, which was composed of mixed birch, spruce, and hackmatac, and which adjoined a dense cedar swamp. The nest was placed in a fork of the tree, about thirty feet from the ground, and was composed, exteriorly, of dried twigs of hackmatac and

birch, with a sparse lining of straw and feathers. In it were two eggs, which proved far advanced toward incubation; they measure 1.94 × 1.50 and 1.95 × 1.51, and are very similar in shape and markings to those described by Dr. Brewer; though I have failed to detect any of the yellow and purple tints mentioned by that writer. The ground-color is of a grayish or dirty white tint, heavily and irregularly marked with blotches of reddish-brown. On one of these eggs is a patch of dark chocolate brown, with blotches upon it of a still darker shade—almost black. This patch measures over one inch in length, and, at its broadest point, three-quarters of an inch in width. On the other egg the blotches and splashes are smaller, lighter in color, and chiefly gathered upon one side. Under a a glass all these 'markings' appear on the surface of the shell; the deeper tints are formed by accumulated layers of light color; an occasional blotch of dark brown, however, exhibiting none of this accumulating process Much of the 'dirtiness' noticed on the ground color is the effect of splashes of pigment under the surface.

The male parent was sitting on the nest at the time I approached it, and, when I began to climb the tree, he flew to a bough some seventy yards off, where he was shot. His stomach contained the partially digested remains of three unfledged Thrushes.—JAMES W. BANKS, *St. John, N. B.*

**Note on Zenaidura yucatanensis Lawr.**—In the 'Proceedings' of the Zoölogical Society of London, 1883, part iii, p. 458, Mr. Salvin states his inability to distinguish this bird from Cuban and Jamaican specimens of *Zenaida amabilis*. This has led me to reëxamine the type, with special reference to the question of identy with *Z. amabilis*, and as the result I must say that the difference is very great. In fact, as stated in 'History of North American Birds' (vol. iii, p 382), *Z. yucatanensis* is exactly intermediate, both in form and coloration, between *Zenaidura carolinensis* and *Zenaida amabilis*, but has 14 rectrices, as in the typical species of the former genus. These facts lead me to suspect that Mr. Salvin has examined specimens of true *Z. amabilis* from Yucatan, which supposition if correct, would render my surmise (l. c.) that *Z. yucatanensis* may be a hybrid between *Zenaidura carolinensis* and *Zenaida amabilis* more worthy of consideration.—ROBERT RIDGWAY, *Washington, D. C.*

**Bernicla brenta nigricans in Massachusetts.**—In the spring of 1883, a specimen of this variety was sent to Mr. C. J. Goodale, of 93 Sudbury St., Boston, to be mounted. It was claimed that it had been killed at or near Chatham, Mass. The bird was perfectly fresh when received.—C. B. CORY, *Boston, Mass.*

**Night Herons and Rails in Dakota.**—I have just returned (Sept. 15, 1883), from camp, near Wall Lake, Dakota. I found many birds moving towards their southern homes, but none so pleasing to me to see as the Night Herons (*Nyctiardea grisea gnævia*).

Perhaps this may seem strange, but in all my experience in this section I have seen but very few of these birds. I have heard them many times, after nightfall, but previous to last week never shot but one. My first I shot out of a flock of about a dozen, two years ago, but a little later than this date; and last week in one day I shot seven. We were camped on Wall Lake, not far from Sioux Falls, and as I walked along the water's edge, they would fly out over the water giving me an excellent shot.

A couple being wounded started back to shore by swimming, and that quite rapidly, until met by my retriever, who, in turn, was pecked at savagely by the wounded birds. All that I shot were young ones. In the evening, when the sun was about an hour high, a flock of some twenty came from the high prairie north of the lake, and flew directly over it, going to the south and disappearing, still upon wing. In this flock were a few old ones. Of those seen during the day around the lake, none were old ones, and the number must have reached eighteen or twenty. At night, we were greeted by the same squawk I had heard in the fall of 1881, 140 miles west of Winnepeg; in 1880, at Skunk Lakes, in Dakota; in 1880, near this city; and last spring, some eight miles from this city. At the latter place I saw two, and one was shot by a friend and brought to me for identification, having first been examined by a majority of our best hunters, none of whom had ever seen the bird before.

Dr. Coues, I believe, did not meet with this bird in this (Missouri) region, except in the Red River country, and since I have only found it as above stated, I do not think the bird is common in this section.

By the way, *Porzana carolina* is getting quite common; in going up the Vermillion River bottoms last week I saw a great many of them. Last spring I saw four Red-breasted Rails (*Rallus elegans*), and one was shot and presented to me. Thus far I have not seen or heard of any others. —D. H. Talbot, *Sioux City, Ia.*

**Occurrence of the Royal Tern (*Sterna regia* Gamb.) at Tangiers in Morocco.**—This species, which has been previously recorded in Irby's 'Ornithology of the Straits of Gibraltar,'* as having been once obtained at Tangiers by M. Favier, a French collector, formerly resident there, has again occurred at that place, two specimens, both males—one a bird of the year and the other nearly mature — killed in the Bay of Tangiers on 10th December last, having been recently sent me. The former is still in my possession and the latter is now in that of Mr. Howard Saunders of London. These specimens, along with thirteen others, were killed from a flock of about thirty, by a resident naturalist, all being shot from a boat without moving from one spot. This Tern has not been observed in Europe, but has occurred several times on the Gold Coast of Africa, chiefly in spring.—John J. Dalgleish, *Edinburgh, Scotland.*

**Buffon's Skua in Western Vermont.**—I have lately examined a specimen of *Stercorarius buffoni* which was shot at West Castleton, Vermont, in

* There recorded in error as *S. bergii*. *Vide* P. Z. S. Lond., 1876, p. 655.

September, 1877, by Mr. George B Dunbar. I have been unable to ascertain the exact date of its capture, but it was little later than the 7th of the month, doubtless within two or three days of that date. The bird, which is in immature plumage, was in company with another apparently of the same species and age, as no difference could be detected between them. It was shot on Screwdriver Pond, a pond of about a mile in length, half a mile from Lake Bomaseen, which is a body of water some nine miles long, situated about ten miles east of the southern end of Lake Champlain.

The occurrence so far inland of a species that usually is found only off our coast, seems to demand some explanation, but that which always first suggests itself in the case of sea-birds taken in the interior, viz., that the bird has been driven from its accustomed haunts by a storm, seems in this case to be insufficient. Although the U. S. Signal Service recorded "heavy northeast gales" as prevailing along the New England coast during the 7th, 8th, and 9th of the month, yet the chances are extremely small that two individuvals of the same species should have been blown by the same gales to the same pond at a distance of a hundred and thirty miles from the coast. I should prefer to suppose that in their youth and inexperience they had wandered in company from the Gulf of St. Lawrence up the St. Lawrence River, and then, guided only by an instinct that impelled them southward, they had followed up the Champlain Valley to the point where they were found.—CHARLES F. BATCHELDER, *Cambridge, Mass.*

**A newly-discovered Breeding Place of Leach's Petrel** (*Cymochorea leucorrhoa* (Vieill.) Coues) **in Scotland.**—A friend of mine, Mr. John Swinburne, when on an ornithological yachting cruise during the past summer, visited the little-known island of Rona, lying about forty miles to the northeast of the Island of Lewis, in the Hebrides, which had not been previously visited, so far as known, by any ornithologist. He found about twelve or fifteen species of birds inhabiting the island, chiefly, of course, sea-birds. Among them he found, on 20th June, the Fork-tailed Petrel breeding in considerable numbers, and took a number of their eggs, which were quite fresh. He tells me he found them breeding in burrows in companies, several pairs of birds inhabiting the same main burrow, off which each pair had a separate and smaller burrow formed at right angles to the main one, at the extremity of which their single egg was laid. The only European breeding place of this species hitherto known is St. Kilda, where Sir William Milne found their nests in 1847. The common Stormy Petrel, *Procellaria pelagica*, also breeds at St. Kilda, although it does not appear to do so on Rona, so far as observed by Mr. Swinburne.—JOHN J. DALGLEISH, *Edinburgh, Scotland.*

**Black-throated Auk** (*Synthliborhamphus antiquus*) **in Wisconsin.**—If my readers will look at a map of North America they will be surprised, to say the least, that a North Pacific sea-bird should find its way, even by accident, to the State of Wisconsin. The great range of the Rocky Mountains, extending to the very verge of the Arctic Ocean, acts as a

natural barrier against all Pacific sea-birds reaching the Atlantic Watershed. That the species under consideration extends its summer migration to the shores of the Arctic Ocean, and even east from Bering Strait, no one knows to what extent along the southern shores of the great Polar Sea, there can be little doubt. It seems to me, then, much more reasonable to suppose that this rare straggler should come south along with the great horde of Swans, Geese, and Ducks which annually pass up the Mackenzie River, through great Slave Lake, thence from lake to lake, until it reached the great Mississippi Valley, than that, being eminently a bird of the sea, it should leave its natural element to cross a great mountain range. Be this as it may, the fact remains that a full plumaged adult Black-throated Auk (*Synthliborhamphus antiquus*) was shot on Lake Koshkonong, Wis. It was shot by Rev. G. E. Gordon of Milwaukee, and the stuffed specimen is beautifully preserved under a glass shade at 'Koshkonong Place,' a private shooting preserve, where I had the pleasure of visiting this fall. The circumstances of the capture are as follows: Late in October, 1882, during a northern 'blizzard' — a storm so severe that it drove most of the Ducks out of the lake—Mr. Gordon was concealed in his blind, shooting Ducks, when he noticed this strange bird circling around his decoys, and he shot it while on the wing. No others were seen in company with it, and at no other time in the memory of the oldest hunters has its like been seen there before. It may well be called a 'strange bird' by the residents and visitors frequenting this charming spot, and the fact of its capture so far away from its habitat will be no less interesting to ornithologists throughout the length and breadth of our land. Many queries could be started here in connection with the eccentricities of straggling birds not quite in place in connection with this short notice. The more I ponder on the facts of the capture of this straggler, the more wonderful it seems to me. Take notice that Lake Koshkonong is in the south-eastern part of Wisconsin, three degrees east of the longitudinal line of the western shore of Lake Superior, and about sixty miles west of Lake Michigan. If the bird had its habitat in the Atlantic Ocean it would be more natural that it should drift with the fresh waters of Hudson's Bay and thence by the Great Lakes to this small lake, whose waters flow into the Mississippi, than that, being as it is a North Pacific bird, it should be found here.

For the benefit of those wishing to compare the species, I will give description and measurements carefully taken from the stuffed specimen. I have compared my observations with specimens from the Smithsonian Institution and my own collection, and I see no chance for being mistaken about the species. Bill black at base and along ridge of culmen, sides light brown running to blue at tip, .6 of an inch long, .25 inch deep at base and less in width, feathered to, and partly over, nostril. Gape 1.12 inch. Feathers of throat extend to within .19 inch of angle of gonys. Distance from eye to nostril, .87. Tarsus 1 inch, scutellate in front and on sides, and very much compressed. Middle toe, without claw, same length as tarsus. Wing 5.50, brown-black. Tail 1.50, black. Black of head extending .37 inch

below eye and down nape to shoulder, where the smoky-ash mantle extends over back and wing-coverts to tail. Whole under parts white up to throat, which is mixed sooty-brown and white, showing less and less white as the under mandible is reached, where the feathers are clear sooty-brown.—GEO. B. SENNETT, *Meadville, Pa.*

**Birds New to the Fauna of Kansas, and others Rare in the State, captured at Wallace, Oct. 12 to 16, 1883.** — The following four species are new to the State:—

**Merula migratoria propinqua** *Ridgw.* WESTERN ROBIN.—Saw a flock of seven. Killed two.

**Zonotrichia gambeli intermedia** *Ridgw.* INTERMEDIATE WHITE-CROWNED SPARROW.— The birds were quite common along the railway in the ditches and cuts, which, from the weeds growing and blown in from the plains, afford both food and shelter. Shot several. Professor D. E. Lantz writes me that he killed one of these birds at Manhattan, Oct. 9, 1883. The Professor is therefore entitled to the credit of adding the bird to our State list. Its capture so far east is a rare find.

**Sphyrapicus varius nuchalis** *Baird.* RED-NAPED WOODPECKER. — Killed a pair out of three young birds found in the willows and cottonwoods thinly skirting the south fork of the Smoky Hill River.

**Buteo borealis krideri** *Hoopes.* KRIDER'S HAWK. — Killed a female. I think I saw another bird, but am not positive, as they closely resemble, at a distance, the light phase of *Archibuteo ferrugineus.*

The following three species of birds are rare in the State:—

**Myiadestes townsendi** (*Aud.*) *Caban.* TOWNSEND'S SOLITAIRE.—I saw ten and shot four of these birds.

**Dendrœca auduboni** (*Towns.*) *Baird.* AUDUBON'S WARBLER.—Shot several; quite common.

**Corvus cryptoleucus** *Couch.* WHITE-NECKED RAVEN.—Saw a flock of six, and another of seven birds; shot three.

I have specimens of the above species in my collection.

I rejoice to know that we are at last to have a standard classification and nomenclature, as it will do away with the present confusion in arrangement and in names. I shall, in accordance with same, issue a new edition of my 'Catalogue of the Birds of Kansas.'—N. S. GOSS, *Topeka, Kansas.*

# CORRESPONDENCE.

[*Correspondents are requested to write briefly and to the point. No attention will be paid to anonymous communications.*]

## Are Trinomials Necessary?

To the Editors of The Auk:—

*Sirs:* I purpose taking advantage of the 'Correspondence' department to ask some of those who are most conversant with the subject to kindly explain through these pages, why it was considered necessary to adopt trinomial nomenclature for American ornithology? Or perhaps the object which I desire to achieve will be more clearly defined if I put the question thus: Why was it considered necessary to institute that division in zoölogical classification termed 'variety,' for which trinomials are used?

I do not ask this merely for the sake of provoking a discussion on the subject, nor because I consider that, in the event of a discussion ensuing, it is either probable or desirable that any change shall be effected in the minds of those who advocate the use of trinomials. I ask it simply to have the whole matter plainly set forth, and, if possible, an end put to the opposition to this system, which is at present so felt by some of our students; an opposition which it would be unfair to suppose would be persisted in if the reasons for adopting the system were thoroughly understood.

Let me state just here, that I do not wish to assert that this opposition occurs in the ranks of the more advanced of American students — the 'scientists'— for I can not say from personal knowledge whether it does or does not exist there; indeed so far as I am aware, it is found only among a portion of my brethren of the 'amateur element'; and while candor compels me to acknowledge that in some cases the objections are undefined and unreasonable, there are others, again, who support their opinions by strong and lucid arguments.

Nor need these gentlemen be at all ashamed to admit their position, for similar opinions are held by many of the *savants* of Europe. I can not, at the moment of writing, recall the name of any English ornithologist who has written in favor of this system, excepting Mr. Henry Seebohm.

Mr. Harting, the editor of the 'Zoölogist,' and who is a member of the British Ornithologists' Union, as well as an F.L.S., and an F.Z.S., has strongly condemned it; and not so much as one trinomial has been placed in the recently issued catalogue of British Birds, published by the B. O. U., and known as the 'Ibis List.' Proof that this omission was not accidental, occasioned, as it might be argued, by the isolated character of the British fauna, is furnished by the list. For instance, the two species of the Hawk Owl, the American and the European, are named by the American systematists respectively *Surnia funerea*, and *Surnia funerea ulula;* while in the 'Ibis List' they stand simply as *Surnia funerea*, and *Surnia ulula*.

Of course it may be urged that this question has already been fully discussed in the writings of Messrs. Baird, Coues, Ridgway, Allen, and others; but some of the readers of 'The Auk' have not access to these papers, and a summary of their contents will be very acceptable to those in whose interest the present communication is framed.

Very respectfully,

*St. John, N. B.* MONTAGUE CHAMBERLAIN.

[Our correspondent's points are well taken, and we will endeavor to briefly explain. First, "Why was it considered necessary to institute that division in zoölogical classification termed 'variety' for which trinomials are used?" From the context our correspondent seems to imply that this is an innovation peculiar to American ornithology. So far from this being the case, 'varieties' are recognized in all departments of zoölogy, and also in botany, and by all authors of authority the world over, in varying extent, however, in different groups and by different writers. For the forms here referred to as 'varieties,' various terms are in more or less current use, some of which are more explicitly distinctive of what is meant than is the more elastic designation 'variety.' Among such terms may be cited 'subspecies,' 'conspecies,' 'incipient species,' 'imperfectly segregated species,' 'geographical races,' 'local forms,' etc. These all imply the character of the forms thus designated, namely, that they are *intergrading*, which, while characterized by differences easily recognized in their well-developed phases, yet so coalesce through intermediate stages of differentiation that they run the one into the other and cannot be sharply defined. On the other hand, 'species' are forms that do not, or at least are not known to intergrade, but are separated by a hiatus of greater or less extent. Complete separation is therefore the criterion of species, intergradation of subspecies, conspecies, or varieties. "But," our correspondent may ask, "why is it necessary to recognize intergrading forms at all?" The extent to which they shall be recognized is a matter of judgment, and practice in this regard must ever vary with the predilection of the writer, some deeming it advantageous to recognize forms by name that others will regard as not sufficiently differentiated to render their recognition necessary in nomenclature. 'Varieties,' or subspecies, are usually geographical, and in many cases evidently result from the varying conditions of environment which prevail within the habitat of a species of wide or continental distribution, these varying conditions being due to differences of latitude, elevation, or topographic features — in other words, to differences of climate, as regards, notably, temperature and moisture. For example, our common Song Sparrow inhabits the greater part of the North American continent, but is represented in different parts of it by quite diverse forms, just as the continent itself embraces wide areas over which prevail climatic conditions very different from those characteristic of other parts. Every one at all conversant with North American birds knows that the Song Sparrow of the States east of the Mississippi River is very different from the Song Sparrow of the great,

elevated, arid plateau of the interior, and that this interior form is again very different from the forms found at different points along the Pacific coast. These various forms, in their extreme phases, are widely diverse, varying in size, color, and in the relative size of the bill, etc., and may be more readily separated from each other than can well-defined species be in some other groups of our birds. Yet these very diverse forms of the Song Sparrow are found to intergrade at the points and over the areas where the physical conditions of these several climatic regions of the continent blend, and in the same gradual manner. What occurs in the Song Sparrow occurs also in most species having the same vast extent of habitat, and in a similar way as regards the development of geographical forms under differing physical conditions of environment. It is obviously a gain in the way of exactness of expression to be able to designate these different forms—to give a "handle to our facts"—by recognizing them in our systems of nomenclature. This recognition is very generally accorded them, but in very different ways. And this brings us to the matter of trinomials.

A common way of recognizing such forms is, for instance,—to go back to the case of the Song Sparrow,—as follows: *Melospiza fasciata*, var. *rufina*, using four terms in expressing the name and status of the varietal form in question. This is cumbersome and inconvenient. Another method is to use the term 'subsp.' in place of 'var.' This is explicit, and expresses the exact relationship of the two forms in question. Still other methods have been tried, as the separation of the subspecific name from the specific by some mark of punctuation, or an arbitrary character, as a letter or figure. But these devices are all needless and burdensome. The trinomial name results from simply dropping the connective term, be it either 'var.,' 'subsp.,' or an arbitrary character, leaving it to be understood that any form designated by a trinomial is a subspecies of the species indicated by the second term of the trinomial. Binomials relate always, in the practise of American ornithologists, to non-intergrading forms, hence to species; while trinomials are only applied to forms which intergrade. Status and relationship are thus as fully understood as would be the case were the whole form of four terms written out. Instead of doing violence to the so-called 'Stricklandian Code,' the trinomial system is a device, as we have stated on other occasions, to meet simply and completely a condition of things unknown and unsuspected when that, in most respects, admirable system of nomenclatural rules was conceived, and is in accordance with the spirit if not with the letter of that 'Code.' It is in no sense a lapse toward polynomialism.

The merits of this system are already becoming recognized abroad, and with greater promptness than, we dare say, the most ardent trinomialist had ever ventured to hope, much less expect. In 'The Ibis' for July, 1881 (p. 290), the editors, in a review of Mr. Ridgway's Nomenclature of North American Birds, speak as follows: "On this we may remark, that we cannot deny the advantages of the use of trinomials when strictly limited to such cases as these [intergrading forms], and have little doubt that they will ultimately come into general use. But they can only be

advantageously employed in countries such as North America and Europe, where large series can be obtained from many different localities. In other parts of the world their use would at present be attended with much inconvienience, it being impossible to ascertain in very many cases, from lack of specimens, whether these intergradations exist or not."

As showing further the progress of trinomialism in England—the stronghold of binomialists—we may quote the following from Mr. Seebohm's 'History of British Birds' (Part II, p. xii) :—

"English ornithologists have for the most part ignored these intermediate forms and with characteristic insular arrogance have sneered at their American *confrères* for adopting trinomial names which their recognition demands. In this, as in so many other things, our American cousins are far in advance of the Old World. One English ornithologist, however, deserves to be mentioned as an honorable exception. Mr. Bowdler Sharp has boldly braved the blame of the Drs. Dry-as-dust and the Professors Red-tape, and the volumes of the 'Catalogue of Birds of the British Museum' hitherto represent almost the only European publications on ornithology which are not behind the age in this respect. The binomial name will probably be generally used as a contraction; but it must never be forgotton that it is only a contraction. The difference between a species and a subspecies, though in some cases not very clear, is far too important a fact to be sacrificed to a craze for a uniform binomial nomenclature."

[We may add that Dr. Gadow, in the eighth volume of the same monumental work, has followed closely, in this respect, in the footsteps of Mr. Sharpe.

On the continent there are already notable and numerous converts to the system, among whom we may mention Count von Berlepsch, Drs. Reichenow, Hartlaub, Severtzoff, Collett, and Stejneger, who have all employed trinomials in their recent papers, while Dr. Cabanis shows an unmistakable leaning in the same direction. Professor Schlegel, of the Leyden Museum, is perhaps to be counted as the father of the system, he having for more than twenty years made use of trinomials in precisely the sense in which they have come into current and almost universal use among American ornithologists, and to a large extent among mammalogists, herpetologists, and ichthyologists. During most of these years he has been cited as a flagrant example of a 'polynomialist,' and on many occasions sneered at for his heterodoxy. While he antedates Americans in the systematic use of trinomials for intergrading forms, we are in position to know that the 'American school' was the spontaneous outcome of our studies of American birds, and that the use of trinomials was forced upon us by conviction of their utility and necessity.

While lack of space forbids our enlarging upon this important subject in the present connection, we trust we have thrown some light upon the questions raised by our correspondent, and that the many estimable workers for whom he may be supposed to speak will see that the use of trinomials is by no means a freak in nomenclature, countenanced by merely a small following of American writers.—J. A. A.]

## NOTES AND NEWS.

THE outcry from all quarters excepting headquarters of American ornithological science against the name of our new journal satisfies us that the best possible name is THE AUK. Were the name of this journal one which anyone could have proposed and everyone liked, it could not have been an 'inspiration.' The editors beg to say that they have copyrighted, patented, and 'called in' the following puns and pleasantries: 1. That THE AUK is an awkward name. 2. That this journal is the awkward organ of the A. O. U. (These two species, with all possible subspecies, for sale cheap at this office.) 3. That this journal should be published in New Yauk, or in the Orkney or Auckland Islands. (It is published at Boston, Mass., at $3.00 per annum, — free to active members of the A. O. U. not in arrears for dues.) 4. That an Auk is the trade-mark of a brand of guano. (A rose by any other name, etc.) 5. That the Auk is already defunct, and THE AUK likely to follow suit. (*Mortua Alca impennis — in pennis* ALCA *rediviva!*) 6. That the Auk couldn't fly, and what's the use of picking out a name, etc., etc. (But the Auk could dive deeper and come up drier than any other bird, as Baird says.) 7. That THE AUK apes 'The Ibis.' (Not at all. It is a great improvement on 'Ibis.' 'Ibis' is two syllables and four letters; 'Auk' is only one syllable and three letters — a fact which bibliographers will appreciate. It is simply following a good precedent because it is good. We wish, however, that we could 'ape' or otherwise imitate 'The Ibis' in sundry particulars. We should like to make THE AUK the leading ornithological journal of America, as 'The Ibis' is of the rest of the world. We should like to make THE AUK the recognized medium of communication between all the ornithologists of this country, as 'The Ibis' is of that. We should like to take and keep the same high standard of excellence in every respect, and thus become such an acknowledged authority as 'The Ibis' is. We should like, on behalf of the A. O. U., to imitate 'The Ibis' in the courtesy and kindliness already shown us on the part of the B. O. U. We should like to 'ape' or otherwise resemble 'The Ibis' in vitality and longevity. May its shadow, already 'sacred,' be cast while the pyramids stand; and may THE AUK in due time be also known of men as an 'antient and honourable foule'!)

— The publication of the long-delayed 'Water Birds' of North America, by Messrs. Baird, Brewer, and Ridgway, is at last passing rapidly though the press. The work will make two volumes, and will, in reality, form the concluding portion of the 'Ornithology' of the Geological Survey of California, Prof. J. D. Whitney, State Geologist. In general style it will be uniform with the 'Land Birds' of the California Survey, with colored figures in the text. The cost of publication will be borne jointly by Professor Whitney and Mr. Alexander Agassiz, and the work will hence appear also in the 'Memoirs of the Museum of Comparative Zoölogy.' The first

volume is expected to appear about June, 1884, and the other by the beginning of 1885.

—Mr. C. B. Cory, has in preparation a work of the birds of Haiti and Santo Domingo. It will be uniform in size with his 'Birds of the Bahamas,' and will give figures of many of the species. It will be issued in four or five parts, the first of which may be expected to appear about March 1.

—Dr. Coues's new 'Key to North American Birds' will doubtless shortly appear, the composition being nearly completed. We have seen stereo proofs to p. 669 (*Rallidæ*), and galley slips into *Laridæ*. The work will comprise about 850 pages, and about 500 cuts, many of them new. The work, entirely rewritten and greatly enlarged, consists of three parts. Part I is the author's 'Field Ornithology,' reprinted with little change. Part II, pp. 59-236, entitled 'General Ornithology,' includes an essay on the classification of birds, and a treatise on avian anatomy. Part III is the 'Systematic Synopsis of North American Birds,' in which the original brief diagnoses are expanded into more elaborate descriptions, with the addition of the characters of the genera and higher groups.

—Dr. P. L. Sclater has begun the publication of a very important 'Review of the Family *Icteridæ*' (Ibis, April and July, 1883), giving diagnoses and quite extended bibliographical references. One genus and several species are characterised as new, and illustrations given of a number of species not previously figured, in the two parts which have already appeared.

—The 'Ornithologist and Oölogist,' lately published by Mr. J. M. Wade of Boston, has passed into the hands of Mr. Frank B. Webster, of Pawtucket, R. I. The publisher announces that with the beginning of the new series (Vol. IX, 1884), the size of the magazine will be increased from 8 to 12 pages per number, the subscription price remaining as heretofore at $1.00 per annum. A 'specimen' number for January, 1884, was issued about December 20, 1883, and contains the usual number of good articles and notes. There is doubtless room and need for a distinctively amateur journal like this, and we cordially wish it success.

—At a meeting of the Ridgway Ornithological Club of Chicago, held December 6, 1883, contributions to the museum and library were announced and seven corresponding members elected. Mr. B. T. Gault read a paper on the Titlark Sparrow (*Passerculus anthinus*), illustrated by specimens of the bird, nest, and eggs collected on the coast of California. Mr. A. K. Coale read a paper on the genus *Zonotrichia*, and mentioned the recent capture of three specimens of *Z. querula* at Trempeleau, Wisc.

—At a recent meeting of the Nuttall Ornithological Club the following officers were re-elected for the ensuing year: President, William Brewster; Vice-president, J. Amory Jeffries; Recording Secretary, Henry A. Purdie; Corresponding Secretary and Editor, J. A. Allen; Treasurer, Charles F. Batchelder.

—The Committee of the A. O. U. on 'Classification and Nomenclature of North American Birds,' recently held an eight days' session in Washington, and determined the scope and form of the proposed new 'List' of North American birds, and formulated a set of rules for the guidance of the committee in their work. The subject of genera was carefully considered, and a considerable reduction from the number now currently recognized was agreed upon. Several days were devoted to a consideration of the principles of nomenclature, with results eminently satisfactory to the committee. Sub-committees were appointed to especially investigate all questions of synonymy, to consider the status of species and subspecies, and to elaborate and codify the rulings of the committee respecting the general principles of nomenclature. The committee worked with the utmost harmony, and adjourned to meet again some months later, to continue and, if possible, conclude their work.

—The A. O. U. Committee on 'Avian Anatomy' held a session in Washington, on December 15, and considered the desirability and possibility of preparing a general work on the anatomy of birds, to be in part based on special memoirs already extant, and in part on original research by members of the committee. The project to some degree took shape, and will be further considered. The committee on 'Classification and Nomenclature' referred to this committee a series of special investigations to determine the relationships of various groups of North American birds, whose position in the natural system has not as yet been satisfactorily assigned.

—The A. O. U. Committee on 'Migration of Birds' met in New York on December 17 to determine ways and means for carrying on their work. The circular of the Chairman, Dr. Merriam, published in this issue of 'The Auk,' shows the plan of operations agreed upon for the current year, and indicates that the work of collecting data will be pushed vigorously and on an extensive scale.

—The A. O. U. Committee on the 'European House Sparrow' have entered heartily upon their work, and have prepared a circular soliciting information from all available sources to aid them in the preparation of their report.

—The A. O. U. Committee on 'Faunal Areas' has decided to prepare as a 'report of progress' a provisional map of faunal areas for North American birds, and will enter upon the collection of data concerning the breeding and winter ranges of all the well-known species for the purpose of eventually mapping the distribution of as many species as may be practicable. For this purpose the committee decided to enlarge its numbers, and to assign particular districts to special workers.

—Dr. R. W. Shufeldt, recently on duty at Jefferson Barracks, La., has returned to Washington and is again in charge of the osteological department of the Army Medical Museum.

—Dr. Leonhard Stejneger has returned from the Commander Islands, Kamtschatka, with an extensive and valuable collection of birds and other objects of natural history, and is now engaged in writing a report for publication upon the material gathered.

—Messrs. J. Murdoch and Middleton Smith, who have been stationed at Point Barrow, Alaska, for the last two years, have returned to Washington, bringing with them a large and interesting collection of birds, which they will work up during the winter and later publish the results of their investigations.

—Mr. Lucien M. Turner, U. S. Signal Observer at Ungava, Northern Labrador, has shipped to the National Museum an immense collection, embracing more than a thousand bird-skins. These will be held until Mr. Turner's return, a year or so hence, when he will prepare a report upon them to be published by the National Museum.

—Mr. Chas. H. Townsend is collecting birds, etc., for the National Museum in Northern California, the central point of his explorations being Baird, Shasta County. During the summer he ascended Mt. Shasta, and made a collection of the birds which breed on that lofty peak.

—Mr. L. Belding, who has so successfully explored the southern extremity of Lower California, is now making collections in the vicinity of San Diego.

—Mr. José C. Zeledon, of San José, Costa Rica, occasionally sends collections, including mostly new or very rare species, to the National Museum.

—Mr. C. C. Nutting has returned from a very successful reconnoissance of Nicaragua, bringing with him about one hundred and thirty species of birds new to the fauna of that country and six new to science.

—Mr. P. L. Jouy, who has been making a collection of Japanese birds for the National Museum, is now in Corea studying and collecting the birds, etc., of that little-known country.

—Mr. Wm. J. Fisher, U. S. Tidal Observer at Kadiak, Alaska, has sent collections of much interest to the National Museum, among the more noteworthy birds being the new *Œstrelata fisheri*, and another rare Petrel, the *Puffinus tenuirostris*.